

SEQUENCE LISTING

<110> Jacobs, Kenneth
McCoy, John M.
LaVallie, Edward R.
Collins-Racie, Lisa A.
Evans, Cheryl
Merberg, David
Treacy, Maurice
Agostino, Michael J.
Steininger II, Robert J.
Bowman, Michael R.
DiBlasio-Smith, Elizabeth
Widom, Angela
Genetics Institute, Inc.

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For Patents, Washington, D.C. 20231

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<212> PRT
<213> Homo sapiens

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35 40 45

Ser Gly Pro Ala Leu Ala Ser Ser Pro Gln Ile Leu Ser Val Phe Ser
50 55 60

Leu Gly Phe Pro Gly Phe Val Asn Gly Ser Cys Val Ser Arg Tyr Lys
65 70 75 80

Pro Asp Ile Ile Ser Pro Pro Gly Leu Pro Pro Pro Asp Leu Pro Ser
85 90 95

Ser Val Ser Ile Phe Tyr Leu Gln Leu Leu Cys Ser His Gly His Cys
100 105 110

Cys Ile Thr Glu Ser Gly Pro Leu Leu Ser Phe Ser Asn Trp Pro Pro
115 120 125

Ser Leu Val Pro His Phe Leu Lys Ser Pro Val His Cys His Gln Ile
130 135 140

Lys Leu Ser Pro Ala Arg Ser Pro Leu Ser Glu Lys Pro Pro Leu Thr
145 150 155 160

Trp Lys His His Cys Leu Ala His Ile Leu Thr Tyr Ser Pro Ser Arg
165 170 175

Leu Asp Pro His Thr Ser Phe Gln Pro Pro Leu Pro Leu His Ser Leu
180 185 190

Leu Pro Pro Pro Pro Pro His Pro Leu Val Ser Pro Pro Leu
195 200 205

<210> 11

<211> 2216

<212> DNA

<213> Homo sapiens

<400> 11

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 <211> 126
 <212> PRT
 <213> Homo sapiens

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 Cys Val Leu Gln Val His Ala Ala Lys Val Ile Pro Ala His Pro Cys
 35 40 45
 Pro Val Ser Val Ser Phe Arg Val Ile Pro Tyr Leu Ser Ile Gly Gly
 50 55 60
 Leu Ile Leu Leu Asp Phe Leu Lys Thr Leu Arg Trp Ser Ile Arg Ser
 65 70 75 80
 Asp Phe Ser His Ser Ser Ala Gly Glu Leu Arg Ile Thr Ser Ser Phe
 85 90 95
 Gly Arg Trp Ser Trp Val Arg Gly Ser Trp Tyr Thr Val Phe Ile Val
 100 105 110
 Ser Leu Ile Gln Asn Ala Asn Lys Phe Asn Val Phe Leu Pro
 115 120 125

<210> 13
 <211> 1426
 <212> DNA
 <213> Homo sapiens

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 <211> 80
 <212> PRT
 <213> Homo sapiens

<400> 14
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 Cys Ser Ser Pro Ser Ile Tyr Leu Ser Leu Ser Leu Leu Val Gly His
 35 40 45
 Phe Val Cys Arg Ala Val Glu Asn Arg Thr Ser Glu Leu Asn Ile Cys
 50 55 60
 Pro Asp Val Lys Val Leu Phe Met Thr Thr Leu Leu Ser Met Tyr Met
 65 70 75 80

<210> 15
 <211> 2364
 <212> DNA
 <213> Homo sapiens

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 Ala Val Gly Ser Ala Phe Thr Gln Asp Thr Arg Ser Leu Lys Thr Gln
 165 170 175
 Leu Ser Gln Gly Arg Ser Ser Pro Gln Leu Asp Pro Leu Arg Lys Ser
 180 185 190
 Pro Thr Met Glu Gln Ala Val Gln Thr Ala Ser Ala His Leu Pro Ala
 195 200 205
 Pro Ala Ala Val Gly Arg Arg Ser Pro Val Ser Thr Arg Pro Leu Pro
 210 215 220
 Ser Ala Ser Gln Lys Ala Gly Glu Asn Gln Glu His Arg Gln Ala Glu
 225 230 235 240
 Val His Lys Val Ser Arg Pro Glu Asn Glu Gln Leu Arg Asn Asp Asn
 245 250 255
 Lys Arg Gln Val Ala Pro Gly Ala Pro Ser Ala Pro Arg Arg Gly Arg
 260 265 270
 Gly Gly His Arg Gly Gly Arg Gly Arg Phe Gly Ile Arg Arg Asp Gly
 275 280 285
 Pro Met Lys Phe Glu Lys Asp Phe Asp Phe Glu Ser Ala Asn Ala Gln
 290 295 300
 Phe Asn Lys Glu Glu Ile Asp Arg Glu Phe His Asn Lys Leu Lys Leu
 305 310 315 320
 Lys Glu Asp Lys Leu Glu Lys Gln Glu Lys Pro Val Asn Gly Glu Asp
 325 330 335
 Lys Gly Asp Ser Gly Val Asp Thr Gln Asn Ser Glu Gly Asn Ala Asp
 340 345 350
 Glu Glu Asp Pro Leu Gly Pro Asn Cys Tyr Tyr Asp Lys Thr Lys Ser
 355 360 365
 Phe Phe Asp Asn Ile Ser Cys Asp Asp Asn Arg Glu Arg Arg Pro Thr
 370 375 380
 Trp Ala Glu Glu Arg Arg Leu Asn Ala Glu Thr Phe Gly Ile Pro Leu
 385 390 395 400
 Arg Pro Asn Arg Gly Arg Gly Gly Tyr Arg Gly Arg Gly Gly Leu Gly
 405 410 415
 Phe Arg Gly Gly Arg Gly Arg Gly Gly Arg Gly Gly Thr Phe Thr
 420 425 430
 Ala Pro Arg Gly Phe Arg Gly Gly Phe Arg Gly Gly Arg Gly Gly Arg
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<210> 17
 <211> 2760
 <212> DNA
 <213> Homo sapiens

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 <212> PRT
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<400> 18

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 Ser Pro Arg Val Gln Arg Gln Val Thr Ser Leu Leu Arg Arg Val Leu
 35 40 45
 Pro Glu Val Thr Pro Ser Arg Leu Ala Ser Ile Ile Gly Val Lys Ser
 50 55 60
 Leu Pro Pro Ala Asp Ile Ser Asp Ile Ile His Ser Thr Glu Lys Gly
 65 70 75 80
 Asp Trp Asn Lys Leu Gly Ile Leu Asp Met Phe Leu Gly Cys Ile Ala
 85 90 95
 Lys Ala Leu Thr Val Gln Leu Lys Ala Lys Gly Thr Thr Ile Thr Gly
 100 105 110
 Thr Ala Gly Thr Thr Val Gly Lys Gly Val Thr Thr Val Thr Leu Pro
 115 120 125
 Met Ile Phe Asn Ser Ser Tyr Leu Arg Arg Gly Glu Ser His Trp Trp
 130 135 140
 Met Lys Gly Ser Thr Pro Thr Gln Ile Ser Glu Ile Ile Ile Lys Leu
 145 150 155 160
 Ile Lys Asp Met Ala Ala Gly His Leu Ser Glu Ala Trp Ser Arg Val
 165 170 175
 Thr Lys Asn Ala Ile Ala Glu Thr Ile Ile Ala Leu Thr Lys Met Glu
 180 185 190
 Glu Glu Phe Arg Ser Pro Val Arg Cys Ile Ala Thr Thr Arg Leu Trp
 195 200 205
 Leu Ala Leu Ala Ser Leu Cys Val Leu Asp Gln Asp His Val Asp Arg
 210 215 220
 Leu Ser Ser Gly Arg Trp Met Gly Lys Asp Gly Gln Gln Lys Gln Met
 225 230 235 240
 Pro Met Cys Asp Asn His Asp Asp Gly Glu Thr Ala Ala Ile Ile Leu
 245 250 255
 Cys Asn Val Cys Gly Asn Leu Cys Thr Asp Cys Asp Arg Phe Leu His
 260 265 270
 Leu His Arg Arg Thr Lys Thr His Gln Arg Gln Val Phe Lys Glu Glu
 275 280 285
 Glu Glu Ala Ile Lys Val Asp Leu His Glu Gly Cys Gly Arg Thr Lys
 290 295 300
 Leu Phe Trp Leu Met Ala Leu Ala Asp Ser Lys Thr Met Lys Ala Met
 305 310 315 320

Val Glu Phe Arg Glu His Thr Gly Lys Pro Thr Thr Ser Ser Ser Glu
 325 330 335
 Ala Cys Arg Phe Cys Gly Ser Arg Ser Gly Thr Glu Leu Ser Ala Val
 340 345 350
 Gly Ser Val Cys Ser Asp Ala Asp Cys Gln Glu Tyr Ala Lys Ile Ala
 355 360 365
 Cys Ser Lys Thr His Pro Cys Gly His Pro Cys Gly Gly Val Lys Asn
 370 375 380
 Glu Glu His Cys Leu Pro Cys Leu His Gly Cys Asp Lys Ser Ala Thr
 385 390 395 400
 Ser Leu Lys Gln Asp Ala Asp Asp Met Cys Met Ile Cys Phe Thr Glu
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 Ala Leu Ser Ala Ala Pro Ala Ile Gln Leu Asp Cys Ser His Ile Phe
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 His Leu Gln Cys Cys Arg Arg Val Leu Glu Asn Arg Trp Leu Gly Pro
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 465 470 475 480
 Glu Asp Val Arg Arg Lys Ala Leu Met Arg Leu Glu Tyr Glu Gly Leu
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 500 505 510
 Pro Ala Gly Tyr Ala Met Asn Arg Tyr Ala Tyr Tyr Val Cys Tyr Lys
 515 520 525
 Cys Arg Lys Ala Tyr Phe Gly Gly Glu Ala Arg Cys Asp Ala Glu Ala
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 Gly Arg Gly Asp Asp Tyr Asp Pro Arg Glu Leu Ile Cys Gly Ala Cys
 545 550 555 560
 Ser Asp Val Ser Arg Ala Gln Met Cys Pro Lys His Gly Thr Asp Phe
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 Leu Glu Tyr Lys Cys Arg Tyr Cys Cys Ser Val Ala Val Phe Phe Cys
 580 585 590
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 595 600 605
 Met Thr Ser Ile Pro Lys Glu Glu Leu Pro His Cys Pro Ala Gly Pro
 610 615 620
 Lys Gly Lys Gln Leu Glu Gly Thr Glu Cys Pro Leu His Val Val His
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Ala His Thr Phe
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<211> 1649
<212> DNA
<213> Homo sapiens

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<211> 92
<212> PRT
<213> Homo sapiens

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Tyr Ile Asn Ile Ser Ile Phe Phe Leu Gln Asn Gln Phe Ile Asn Gly
35 40 45
Arg Gly Val Trp Gly Gly His Met Glu Leu Pro Leu Trp Gly Gly Pro
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Leu His Tyr Pro Thr Tyr Arg Pro Phe Pro His Pro Pro Pro His Ser
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Pro Pro Pro Gly Cys Asp Cys Cys Lys Met Gly Val
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<211> 2644
<212> DNA
<213> Homo sapiens

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<210> 22

<211> 667
 <212> PRT
 <213> Homo sapiens

<220>
 <221> UNSURE
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<400> 22

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Ser Lys Ala Pro Ala Ser Ser Ser Ser Asn Pro Glu Glu Val Gln Lys
 35 40 45

Glu Gly Pro Thr Ala Leu Gln Asp Ser Asn Ser Gly Glu Pro Asp Ile
 50 55 60

Pro Pro Pro Gln Pro Asp Cys Gly Asp Phe Arg Ser Leu Gln Glu Glu
 65 70 75 80

Gln Ser Arg Pro Thr Thr Ala Val Ser Ser Pro Gly Gly Pro Ala Arg
 85 90 95

Ala Pro Pro Tyr Gln Glu Pro Pro Trp Gly Gly Pro Ala Thr Ala Pro
 100 105 110

Tyr Ser Leu Glu Thr Leu Lys Gly Gly Thr Ile Leu Gly Thr Arg Ser
 115 120 125

Leu Lys Gly Thr Ser Tyr Cys Leu Phe Gly Arg Leu Ser Gly Cys Asp
 130 135 140

Val Cys Leu Glu His Pro Ser Val Ser Arg Tyr His Ala Val Leu Gln
 145 150 155 160

His Arg Ala Ser Gly Pro Asp Gly Glu Cys Asp Ser Asn Gly Pro Gly
 165 170 175

Phe Tyr Leu Tyr Asp Leu Gly Ser Thr His Gly Thr Phe Leu Asn Lys
 180 185 190

Thr Arg Ile Pro Pro Arg Thr Tyr Cys Arg Val His Val Gly His Val
 195 200 205

Val Arg Phe Gly Gly Ser Thr Arg Leu Phe Ile Leu Gln Gly Pro Glu
 210 215 220

Glu Asp Arg Glu Ala Glu Ser Glu Leu Thr Val Thr Gln Leu Lys Glu
 225 230 235 240

Leu Arg Lys Gln Gln Gln Ile Leu Leu Xaa Lys Lys Met Leu Gly Glu
 245 250 255

Asp Ser Asp Glu Glu Glu Glu Met Asp Thr Ser Glu Arg Lys Ile Asn
 260 265 270

0030644:050699

Ala Gly Ser Gln Asp Asp Glu Met Gly Cys Thr Trp Gly Met Gly Glu
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 305 310 315 320
 Gln Gly Phe Phe Asp Arg Glu Gly Glu Glu Leu Glu Tyr Glu Phe Asp
 325 330 335
 Glu Gln Gly His Ser Thr Trp Leu Cys Arg Val Arg Leu Pro Val Asp
 340 345 350
 Asp Ser Thr Gly Lys Gln Leu Val Ala Glu Ala Ile His Ser Gly Lys
 355 360 365
 Lys Lys Glu Ala Met Ile Gln Cys Ser Leu Glu Ala Cys Arg Ile Leu
 370 375 380
 Asp Thr Leu Gly Leu Leu Arg Gln Glu Ala Val Ser Arg Lys Arg Lys
 385 390 395 400
 Ala Lys Asn Trp Glu Asp Glu Asp Phe Tyr Asp Ser Asp Asp Thr
 405 410 415
 Phe Leu Asp Arg Thr Gly Leu Ile Glu Lys Lys Arg Leu Asn Arg Met
 420 425 430
 Lys Lys Ala Gly Lys Ile Asp Glu Lys Pro Glu Thr Phe Glu Ser Leu
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 Val Ala Lys Leu Asn Asp Ala Glu Arg Glu Leu Ser Glu Ile Ser Glu
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 465 470 475 480
 Ser Leu Asp Ala Phe Met Ser Glu Met Lys Ser Gly Ser Thr Leu Asp
 485 490 495
 Gly Val Ser Arg Lys Lys Leu His Leu Arg Thr Phe Glu Leu Arg Lys
 500 505 510
 Glu Gln Gln Arg Leu Lys Gly Leu Ile Lys Ile Val Lys Pro Ala Glu
 515 520 525
 Ile Pro Glu Leu Lys Lys Thr Glu Thr Gln Thr Thr Gly Ala Glu Asn
 530 535 540
 Lys Ala Lys Lys Leu Thr Leu Pro Leu Phe Gly Ala Met Lys Gly Gly
 545 550 555 560
 Ser Lys Phe Lys Leu Lys Thr Gly Thr Val Gly Lys Leu Pro Pro Lys
 565 570 575
 Arg Pro Glu Leu Pro Pro Thr Leu Met Arg Met Lys Asp Glu Pro Glu
 580 585 590

Val Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Lys Glu Lys Glu
595 600 605

Glu His Glu Lys Lys Lys Leu Glu Asp Gly Ser Leu Ser Arg Pro Gln
610 615 620

Pro Glu Ile Glu Pro Glu Ala Ala Val Gln Glu Met Arg Pro Pro Thr
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Asp Leu Thr His Phe Lys Glu Thr Gln Thr His Gly Asn Ile Phe Leu
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Leu Leu Pro Val Leu Phe Ser Gly Gln Leu His
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<210> 23
<211> 2402
<212> DNA
<213> Homo sapiens

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 aa 2402

<210> 24
 <211> 520
 <212> PRT
 <213> Homo sapiens

<400> 24
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 35 40 45
 Ser Arg Val Ala Thr Ser Thr Asp Pro Ser Cys Ser Gly Phe Ala Pro
 50 55 60
 Pro Asp Phe Asn His Cys Leu Lys Asp Trp Asp Tyr Asn Gly Leu Pro
 65 70 75 80
 Val Leu Thr Thr Asn Ala Ile Gly Gln Trp Asp Leu Val Cys Asp Leu
 85 90 95
 Gly Trp Gln Val Ile Leu Glu Gln Ile Leu Phe Ile Leu Gly Phe Ala
 100 105 110
 Ser Gly Tyr Leu Phe Leu Gly Tyr Pro Ala Asp Arg Phe Gly Arg Arg
 115 120 125
 Gly Ile Val Leu Leu Thr Leu Gly Leu Val Gly Pro Cys Gly Val Gly
 130 135 140
 Gly Ala Ala Ala Gly Ser Ser Thr Gly Val Met Ala Leu Arg Phe Leu
 145 150 155 160
 Leu Gly Phe Leu Leu Ala Gly Val Asp Leu Gly Val Tyr Leu Met Arg
 165 170 175
 Leu Glu Leu Cys Asp Pro Thr Gln Arg Leu Arg Val Ala Leu Ala Gly
 180 185 190
 Glu Leu Val Gly Val Gly Gly His Phe Leu Phe Leu Gly Leu Ala Leu
 195 200 205
 Val Ser Lys Asp Trp Arg Phe Leu Gln Arg Met Ile Thr Ala Pro Cys
 210 215 220
 Ile Leu Phe Leu Phe Tyr Gly Trp Pro Gly Leu Phe Leu Glu Ser Ala
 225 230 235 240
 Arg Trp Leu Ile Val Lys Arg Gln Ile Glu Glu Ala Gln Ser Val Leu
 245 250 255
 Arg Ile Leu Ala Glu Arg Asn Arg Pro His Gly Gln Met Leu Gly Glu
 260 265 270

Glu Ala Gln Glu Ala Leu Gln Asp Leu Glu Asn Thr Cys Pro Leu Pro
 275 280 285
 Ala Thr Ser Ser Phe Ser Phe Ala Ser Leu Leu Asn Tyr Arg Asn Ile
 290 295 300
 Trp Lys Asn Leu Leu Ile Leu Gly Phe Thr Asn Phe Ile Ala His Ala
 305 310 315 320
 Ile Arg His Cys Tyr Gln Pro Val Gly Gly Gly Gly Ser Pro Ser Asp
 325 330 335
 Phe Tyr Leu Cys Ser Leu Leu Ala Ser Gly Thr Ala Ala Leu Ala Cys
 340 345 350
 Val Phe Leu Gly Val Thr Val Asp Arg Phe Gly Arg Arg Gly Ile Leu
 355 360 365
 Leu Leu Ser Met Thr Leu Thr Gly Ile Ala Ser Leu Val Leu Leu Gly
 370 375 380
 Leu Trp Asp Tyr Leu Asn Glu Ala Ala Ile Thr Thr Phe Ser Val Leu
 385 390 395 400
 Gly Leu Phe Ser Ser Gln Ala Ala Ala Ile Leu Ser Thr Leu Leu Ala
 405 410 415
 Ala Glu Val Ile Pro Thr Thr Val Arg Gly Arg Gly Leu Gly Leu Ile
 420 425 430
 Met Ala Leu Gly Ala Leu Gly Gly Leu Ser Gly Pro Ala Gln Arg Leu
 435 440 445
 His Met Gly His Gly Ala Phe Leu Gln His Val Val Leu Ala Ala Cys
 450 455 460
 Ala Leu Leu Cys Ile Leu Ser Ile Met Leu Leu Pro Glu Thr Lys Arg
 465 470 475 480
 Lys Leu Leu Pro Glu Val Leu Arg Asp Gly Glu Leu Cys Arg Arg Pro
 485 490 495
 Ser Leu Leu Arg Gln Pro Pro Pro Thr Arg Cys Asp His Val Pro Leu
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 Leu Ala Thr Pro Asn Pro Ala Leu
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<210> 25
 <211> 2377
 <212> DNA
 <213> Homo sapiens

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 cacagtcctt gctgcaatga ccagtcatga ccttatgaag tttgttgccc catttaacga 180
 agtaattgaa caaatgaaaa ttatcagaga ctctactccc aaccaatata tgggtgctgat 240


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<210> 26
 <211> 351
 <212> PRT
 <213> Homo sapiens

<400> 26
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 Ser His Asp Leu Met Lys Phe Val Ala Pro Phe Asn Glu Val Ile Glu
 35 40 45
 Gln Met Lys Ile Ile Arg Asp Ser Thr Pro Asn Gln Tyr Met Val Leu
 50 55 60
 Ile Lys Phe Arg Ala Gln Ala Asp Ala Asp Ser Phe Tyr Met Thr Cys
 65 70 75 80
 Asn Gly Arg Gln Phe Asn Ser Ile Glu Asp Asp Val Cys Gln Leu Val
 85 90 95

Tyr Val Glu Arg Ala Glu Val Leu Lys Ser Glu Asp Gly Ala Ser Leu
 100 105 110
 Pro Val Met Asp Leu Thr Glu Leu Pro Lys Cys Thr Val Cys Leu Glu
 115 120 125
 Arg Met Asp Glu Ser Val Asn Gly Ile Leu Thr Thr Leu Cys Asn His
 130 135 140
 Ser Phe His Ser Gln Cys Leu Gln Arg Trp Asp Asp Thr Thr Cys Pro
 145 150 155 160
 Val Cys Arg Tyr Cys Gln Thr Pro Glu Pro Val Glu Glu Asn Lys Cys
 165 170 175
 Phe Glu Cys Gly Val Gln Glu Asn Leu Trp Ile Cys Leu Ile Cys Gly
 180 185 190
 His Ile Gly Cys Gly Arg Tyr Val Ser Arg His Ala Tyr Lys His Phe
 195 200 205
 Glu Glu Thr Gln His Thr Tyr Ala Met Gln Leu Thr Asn His Arg Val
 210 215 220
 Trp Asp Tyr Ala Gly Asp Asn Tyr Val His Arg Leu Val Ala Ser Lys
 225 230 235 240
 Thr Asp Gly Lys Ile Val Gln Tyr Glu Cys Glu Gly Asp Thr Cys Gln
 245 250 255
 Glu Glu Lys Ile Asp Ala Leu Gln Leu Glu Tyr Ser Tyr Leu Leu Thr
 260 265 270
 Ser Gln Leu Glu Ser Gln Arg Ile Tyr Trp Glu Asn Lys Ile Val Arg
 275 280 285
 Ile Glu Lys Asp Thr Ala Glu Glu Ile Asn Asn Met Lys Thr Lys Phe
 290 295 300
 Lys Glu Thr Ile Glu Lys Cys Asp Asn Leu Glu His Lys Leu Asn Asp
 305 310 315 320
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 325 330 335
 Thr Lys Val Ala Lys Leu Lys Ser Gln Ser Gly Tyr Pro Ser Ile
 340 345 350

<210> 27
 <211> 460
 <212> DNA
 <213> Homo sapiens

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accagaaaga taagactggtt cttaacgacc tagatgattc tggtcatctc tgaacgggat 360
cagggttttgt cctcactcca attaaaagaa agcaatgtca catgaaaaaa aaaaaaaaaa 420
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 460

<210> 28
<211> 85
<212> PRT
<213> Homo sapiens

<400> 28
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Ala Ala Asn Glu Lys Pro Phe Met Gln Thr Phe Leu Thr Ile Leu Lys
35 40 45
Ile Phe Leu Met Met Met Thr Ser Ser Glu Met Pro Ser Gly Cys Arg
50 55 60
Arg Gly Gln Ala Leu Gly Thr Glu Pro Gln Cys Glu Pro Ala Gln Asp
65 70 75 80
Ser Phe Arg Trp Phe
85

<210> 29
<211> 3204
<212> DNA
<213> Homo sapiens

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 <212> PRT
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 35 40 45
 Ala Thr Glu Asp Asp Leu Val Glu Met Gln Gly Tyr Lys Asp Lys Leu
 50 55 60
 Ser Ile Ile Gly Glu Val Leu Ser Arg Arg His Met Lys Val Ala Phe
 65 70 75 80
 Phe Gly Arg Thr Ser Ser Gly Lys Ser Ser Val Ile Asn Ala Met Leu
 85 90 95
 Trp Asp Lys Val Leu Pro Ser Gly Ile Gly His Ile Thr Asn Cys Phe
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 Leu Ser Val Glu Gly Thr Asp Gly Asp Lys Ala Tyr Leu Met Thr Glu
 115 120 125

Gly Ser Asp Glu Lys Lys Ser Val Lys Thr Val Asn Gln Leu Ala His
 130 135 140
 Ala Leu His Met Asp Lys Asp Leu Lys Ala Gly Cys Leu Val Arg Val
 145 150 155 160
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 Val Asp Ser Pro Gly Thr Asp Val Thr Thr Glu Leu Asp Ser Trp Ile
 180 185 190
 Asp Lys Phe Cys Leu Asp Ala Asp Val Phe Val Leu Val Ala Asn Ser
 195 200 205
 Glu Ser Thr Leu Met Asn Thr Glu Lys His Phe Phe His Lys Val Asn
 210 215 220
 Glu Arg Leu Ser Lys Pro Asn Ile Phe Ile Leu Asn Asn Arg Trp Asp
 225 230 235 240
 Ala Ser Ala Ser Glu Pro Glu Tyr Met Glu Asp Val Arg Arg Gln His
 245 250 255
 Met Glu Arg Cys Leu His Phe Leu Val Glu Glu Leu Lys Val Val Asn
 260 265 270
 Ala Leu Glu Ala Gln Asn Arg Ile Phe Phe Val Ser Ala Lys Glu Val
 275 280 285
 Leu Ser Ala Arg Lys Gln Lys Ala Gln Gly Met Pro Glu Ser Gly Val
 290 295 300
 Ala Leu Ala Glu Gly Phe His Ala Arg Leu Gln Glu Phe Gln Asn Phe
 305 310 315 320
 Glu Gln Ile Phe Glu Glu Cys Ile Ser Gln Ser Ala Val Lys Thr Lys
 325 330 335
 Phe Glu Gln His Thr Ile Arg Ala Lys Gln Ile Leu Ala Thr Val Lys
 340 345 350
 Asn Ile Met Asp Ser Val Asn Leu Ala Ala Glu Asp Lys Arg His Tyr
 355 360 365
 Ser Val Glu Glu Arg Glu Asp Gln Ile Asp Arg Leu Asp Phe Ile Arg
 370 375 380
 Asn Gln Met Asn Leu Leu Thr Leu Asp Val Lys Lys Lys Ile Lys Glu
 385 390 395 400
 Val Thr Glu Glu Val Ala Asn Lys Val Ser Cys Ala Met Thr Asp Glu
 405 410 415
 Ile Cys Arg Leu Ser Val Leu Val Asp Glu Phe Cys Ser Glu Phe His
 420 425 430
 Pro Asn Pro Asp Val Leu Lys Ile Tyr Lys Ser Glu Leu Asn Lys His
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Lys Pro Leu Leu Pro Ala Gly Ile Gln Asp Lys Leu His Thr Leu Ile
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Pro Cys Lys Lys Phe Asp Leu Ser Tyr Asn Leu Asn Tyr His Lys Leu
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Cys Ser Asp Phe Gln Glu Asp Ile Val Phe Arg Phe Ser Leu Gly Trp
515 520 525

Ser Ser Leu Val His Arg Phe Leu Gly Pro Arg Asn Ala Gln Arg Val
530 535 540

Leu Leu Gly Leu Ser Glu Pro Ile Phe Gln Leu Pro Arg Ser Leu Ala
545 550 555 560

Ser Thr Pro Thr Ala Pro Thr Thr Pro Ala Thr Pro Asp Asn Ala Ser
565 570 575

Gln Glu Glu Leu Met Ile Thr Leu Val Thr Gly Leu Ala Ser Val Thr
580 585 590

Ser Arg Thr Ser Met Gly Ile Ile Ile Val Gly Gly Val Ile Trp Lys
595 600 605

Thr Ile Gly Trp Lys Leu Leu Ser Val Ser Leu Thr Met Tyr Gly Ala
610 615 620

Leu Tyr Leu Tyr Glu Arg Leu Ser Trp Thr Thr His Ala Lys Glu Arg
625 630 635 640

Ala Phe Lys Gln Gln Phe Val Asn Tyr Ala Thr Glu Lys Leu Arg Met
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Ile Val Ser Ser Thr Ser Ala Asn Cys Ser His Gln Val Lys Gln Gln
660 665 670

Ile Ala Thr Thr Phe Ala Arg Leu Cys Gln Gln Val Asp Ile Thr Gln
675 680 685

Lys Gln Leu Glu Glu Glu Ile Ala Arg Leu Pro Lys Glu Ile Asp Gln
690 695 700

Leu Glu Lys Ile Gln Asn Asn Ser Lys Leu Leu Arg Asn Lys Ala Val
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Ser Asn Glu Asp Ser
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 <212> PRT
 <213> Homo sapiens

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 Ala Ala Pro Val Pro Gly Val Ala Gln Gln Gly Val Ser Leu Gln Pro
 50 55 60
 Gly Thr Thr Gln Ile Cys Thr Gln Thr Asp Pro Phe Gln Gln Thr Phe
 65 70 75 80
 Ile Val Cys Pro Pro Ala Phe Gln Thr Gly Leu Gln Ala Thr Thr Lys
 85 90 95
 His Ser Gly Phe Pro Val Arg Met Asp Asn Ala Val Pro Ile Val Pro
 100 105 110
 Gln Ala Pro Ala Ala Gln Pro Thr Thr Asp Ser Val Arg Ser Ser His
 115 120 125
 Ala Asp Leu Gln Gly Lys Asn Ile Gln Thr Phe Leu Arg Asn Gly Leu
 130 135 140
 Leu Arg Lys Leu Tyr Thr Thr Asn Gly Ser Asn Ser Pro Pro Ser Ser
 145 150 155 160
 Ser His Ile Thr Pro Gln Tyr Ala Val Pro Phe Thr Leu Ser Cys Ala
 165 170 175
 Ala Gly Arg Pro Ala Leu Val Glu Gln Thr Ala Ala Val Leu Gln Ala
 180 185 190
 Trp Pro Gly Gly Thr Gln Gln Ile Leu Leu Pro Ser Thr Trp Gln Gln
 195 200 205
 Leu Pro Gly Val Ala Leu His Asn Ser Val Gln Pro Thr Ala Met Ile
 210 215 220
 Pro Glu Ala Met Gly Ser Gly Gln Gln Leu Ala Asp Trp Arg Asn Ala
 225 230 235 240
 His Ser His Gly Asn Gln Tyr Ser Thr Ile Met Gln Gln Pro Ser Leu
 245 250 255
 Leu Thr Asn His Val Thr Leu Ala Thr Ala Gln Pro Leu Asn Val Gly
 260 265 270
 Val Ala His Val Val Arg Gln Gln Gln Ser Ser Ser Leu Pro Ser Lys
 275 280 285
 Lys Asn Lys Gln Ser Ala Pro Val Ser Ser Lys Ser Ser Leu Asp Val
 290 295 300
 Leu Pro Ser Gln Val Tyr Ser Leu Val Gly Ser Ser Pro Leu Arg Thr
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<213> Homo sapiens

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Lys Ala Val Phe Tyr Ala Glu Phe Gln Asn Ile Arg His Lys Gly Glu
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290

295

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Phe Leu Asp Thr Ala Leu Cys Trp Trp Ile Phe Ile Ser Leu Thr Gln
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Thr Met Lys Leu Leu Lys Leu Arg Arg Asn Ile Val Lys Leu Ser Leu
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Tyr Arg His Phe Thr Asn Thr Leu Ile Leu Ala Val Ala Ala Ser Ile
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 Trp Cys Ala Glu Leu His Trp Glu Asp Phe Gln Arg Gly Arg Ala Ala
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 50 55 60
 Ala Gly Ile Asp Trp Gly Ile Phe Pro Glu Ser Asp Ser Lys Asp Pro
 65 70 75 80
 Gly Gly Asp Gly Ile Asp Trp Gly Asp Asp Ala Val Ala Leu Gln Ile
 85 90 95
 Thr Val Leu Glu Ala Gly Thr Gln Ala Pro Glu Gly Val Ala Arg Gly
 100 105 110
 Pro Asp Ala Leu Thr Leu Leu Glu Tyr Thr Glu Thr Arg Asn Gln Phe
 115 120 125
 Leu Asp Glu Leu Met Glu Leu Glu Ile Phe Leu Ala Gln Arg Ala Val
 130 135 140
 Glu Leu Ser Glu Glu Ala Asp Val Leu Ser Val Ser Gln Phe Gln Leu
 145 150 155 160
 Ala Pro Ala Ile Leu Gln Gly Gln Thr Lys Glu Lys Met Val Thr Met
 165 170 175
 Val Ser Val Leu Glu Asp Leu Ile Gly Lys Leu Thr Ser Leu Gln Leu
 180 185 190
 Gln His Leu Phe Met Ile Leu Ala Ser Pro Arg Ser Gly Phe Pro Leu
 195 200 205
 Met Gln Gly Ser Ala Ile Leu Ser Ser Ser Ala Ser Leu Tyr Ser Ser
 210 215 220
 Ser Cys Ser Met Thr Pro
 225 230

<210> 41
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<400> 41
 cccttgagat gattttctct tttcaacttc ttgaacttgg acatgaagga tgtgggcccc 60
 gaatcatgtg gccagccac cccctgttgg ccctcaccag ccttgaggatc tgttctaggg 120
 aaggcctccc agcatctggg actcgagagt gggcagcccc tctacctcct ggagctgaac 180
 tggggtggaa ctgagtgtgt tcttagctct accgggagga cagctgcctg tttcctcccc 240
 accagcctcc tccccacatc cccagctgcc tggctgggtc ctgaagccct ctgtctacct 300
 gggagaccag ggaccacagg ccttagggat acagggggtc ccttctgtt accaccccc 360
 accctcctcc aggacaccac taggtggtgc tggatgctt tcttttgcc agccaaggtt 420
 cacggcgatt ctccccatgg gatcttgagg gaccaagctg ctgggattgg gaaggagttt 480
 caccctgacc gttgcctag ccaggttccc aggaggcctc accatactcc ctttcagggc 540
 cagggtcca gcaagcccag ggcaaggatc ctgtgctgct gtctggttga gagcctgcc 600
 ccgtgtgtcg ggagtgtggg ccaggctgag tgcataggtg acagggccgt gagcatgggc 660
 ctgggtgtgt gtgagctcag gcctaggtgc gcagtgtgga gacgggtgtt gtcggggaag 720
 aggtgtggct tcaaagtgtg tgtgtgcagg ggggtgggtg gttagcgtgg gttaggggaa 780
 cgtgtgtgcg cgtgctgggt ggcatgtgag atgagtgact gccggtgaat gtgtccacag 840
 ttgagaggtt ggagcaggat gagggaatcc tgtcaccatc aataatcact tgtggagcgc 900
 cagctctgcc caagacgcca cctgggcgga cagccaggag ctctccatgg ccaggctgcc 960
 tgtgtgcatg ttccctgtct ggtgccctt tgcccgcctc ctgcaaacct cacagggtcc 1020
 ccacacaaca gtgccctcca gaagcagccc ctcgagggca gaggaaggaa aatggggatg 1080
 gctggggctc tctccatcct ccttttctcc ttgcttcgc atggctggcc tccccctcca 1140
 aaacctccat tcccctgtcg ccagcccctt tgccatagcc tgattttggg gaggaggaa 1200
 gggcgatttg agggagaaagg ggagaaagct tatggctggg tctggtttct tcccttccca 1260
 gagggtctta ctgttccagg gtggccccag ggcaggcagg ggccacacta tgctgcgc 1320
 ctggtaaagg tgaccctgc catttaccag cagccctggc atgttctcgc cccacaggaa 1380
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 actgatttt tgcctgccc ctgaccctt gtccctctt gagggagggg agctatgcta 1500
 ggactccaac ctcagggaact cgggtggcct gcgctagctt cttttgatac tgaaaacttt 1560
 taaggtggga ggggtggcaag ggaatgtgctt aataaatcaa ttccaagcct caaaaaaaaa 1620
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1680
 aaaaaaaaaa aaaaaaaaaa a a 1701

<210> 42
 <211> 240
 <212> PRT
 <213> Homo sapiens

<400> 42
 Met Lys Asp Val Gly Pro Glu Ser Cys Gly Gln Pro Thr Pro Cys Trp
 1 5 10 15
 Pro Ser Pro Ala Leu Glu Ser Val Leu Gly Lys Ala Ser Gln His Leu
 20 25 30
 Gly Leu Glu Ser Gly Gln Pro Leu Tyr Leu Leu Glu Leu Asn Trp Gly
 35 40 45
 Gly Thr Glu Cys Val Leu Ser Ser Thr Gly Arg Thr Ala Ala Cys Phe
 50 55 60
 Leu Pro Thr Ser Leu Leu Pro Thr Ser Pro Ala Ala Trp Leu Gly Pro
 65 70 75 80
 Glu Ala Leu Cys Leu Pro Gly Arg Pro Gly Thr Thr Gly Leu Arg Asp
 85 90 95

acttactaga gtgatgatgt gaaagaaatg gtgattctgg tatcatgggtg tttattttct 1620
 ttcttataac tgcagagaaa atatcctgac taaaaaaaaat tcattttttt ggattccttt 1680
 cttttacaaa ttgtgctgag gcaactatgg catagaaata aacatttgac attaaaaata 1740
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1784

<210> 44
 <211> 82
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Cys His Lys Ile Cys Thr Phe Phe Thr Phe Phe Pro Leu Tyr Ile
 1 5 10 15
 Ser Tyr Gly Leu Gln Leu Val His Ser Glu Asn Asn Asn Asn Lys Ser
 20 25 30
 Pro Phe Ile Phe Phe Asn Asn Cys Ile Ser Ala Gln Val Ile His Tyr
 35 40 45
 Ser Leu Lys Pro Cys Leu Cys Asn Leu Thr Ser Asp Met Leu Ala Ile
 50 55 60
 Lys Ala Cys Thr Cys Asn Asn Glu Lys Glu Lys Ala Phe Tyr Ile Thr
 65 70 75 80
 Thr Gln

<210> 45
 <211> 1034
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> (598)

<400> 45
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 aggatctatc acaagctccg ttctcctggc cggcggggcg actggtagcg caggcttgte 120
 acgcggccac cgcggccttg cacactcacc gcgaccacc gcacacagcc gcttacctcc 180
 aagagctggg gcgcatgcgc aaagtgggtc tcgaggcccc agatgagacc accctaaagg 240
 agctggccga gacctgcaa cagaagaaca ttgaccacat gctgtggctt gagcaaccag 300
 agaatatcgc cacttgatt gctctccggc cctaccccaa ggaagaagtg ggccagtatt 360
 tgaagaagtt ccgattgttc aagtaactgc tgctttgatg tgtttgaata cgcaggccac 420
 ccattccaaa gcatcatgtg ttctttgcag tgtcagcttg ctcccgctct tcagttgtga 480
 caatttcttg agggttaagc acatgttcat attaaagtgt tcattaataa ctacttcctc 540
 ttattaataa gttcaagtgg ggaagggtgg agagcagtat tgtctgggga tcattgcnca 600
 aatagaagat ttggtagac tctcctgtgg ggtcaagga aactcccttc cagtcactcg 660
 ggtttgaaac tttgcttttg aattccttct tattcacatc cagttatcat atttcattga 720
 atccaagata acctcaactt caagatgcgg tagtatttta tgtattgtta aaaaatatgc 780
 cggcaaatga aacacttgta tttcaataac aaagatgtta aaatttggcc agtgtggtgg 840
 ctcatatctg ttaattccag ggttttggga agccaaggca ggaggatcgc ttgagcccat 900
 gagttcaagg ttacagtcag ttctaatacag gccaccgcac tccagcgtgg gcaacagagt 960
 gagacacggt ttctataaag attaataaca agttaaaaaa aaaaaaaaaa aaaaaaaaaa 1020
 aaaaaaaaaa aaaa 1034

<210> 46

<211> 126
 <212> PRT
 <213> Homo sapiens

<400> 46
 Met Ala Ala Ser Gly Ala Glu Pro Gln Val Leu Val Gln Tyr Leu Val
 1 5 10 15
 Leu Arg Lys Asp Leu Ser Gln Ala Pro Phe Ser Trp Pro Ala Gly Ala
 20 25 30
 Leu Val Ala Gln Ala Cys His Ala Ala Thr Ala Ala Leu His Thr His
 35 40 45
 Arg Asp His Pro His Thr Ala Ala Tyr Leu Gln Glu Leu Gly Arg Met
 50 55 60
 Arg Lys Val Val Leu Glu Ala Pro Asp Glu Thr Thr Leu Lys Glu Leu
 65 70 75 80
 Ala Glu Thr Leu Gln Gln Lys Asn Ile Asp His Met Leu Trp Leu Glu
 85 90 95
 Gln Pro Glu Asn Ile Ala Thr Cys Ile Ala Leu Arg Pro Tyr Pro Lys
 100 105 110
 Glu Glu Val Gly Gln Tyr Leu Lys Lys Phe Arg Leu Phe Lys
 115 120 125

<210> 47
 <211> 1626
 <212> DNA
 <213> Homo sapiens

<400> 47
 caacttggtgt agctgaaggt ttgtttgtga cttattacag agcctgtgac ttaaaaatcc 60
 ttcccacaac cacaagctaa agtgggagaa gacaaactac ctcacctttt caaccaagag 120
 ggaggagcaa aaatcagtgat actttttacag aagaacctgc cagcctgtga tgatcctacc 180
 aaagagaaac ctcaatgagt tatggaattt cctttttggt gaattgagtg ctgtttttgc 240
 ttttctcaga ttccaaatga gagtatacat ttttctttgt ttgatgtgct gggtgagatc 300
 tgataataaaa agaccatgcc ttgaattctc tcagctaagt gtaaaggatt ccttcagaga 360
 tttattttatt ccgagaatag agaccattct gatgatgtat acaaggaaca acctaaactg 420
 tgctgagcca ctgtttgaac aaaataactc acttaatggt aatttcaaca cacaaaagaa 480
 aacagtctgg cttattcacg gatacagacc agtaggctcc atcccattat ggcttcagaa 540
 cttcgtgaagg attttgctga atgaagaaga tatgaatgta attgtagtag actggagccg 600
 ggggtgctaca actttttattt ataataagagc agttaaaaac accagaaaag ttgctgtgag 660
 tttgagtgtg cacattaaaa atcttttgaa gcatgggtgca tctcttgaca attttcattt 720
 cataggtgtg agtttagggg ctcatatcag tggattttgt ggaaagatat ttcatgggtca 780
 acttggaaga ataacagggtc ttgacctgc tgggccaagg ttctccagaa aaccaccata 840
 tagcagatta gattacacgg atgcaaagtt tgtggatgac atccattctg actccaatgg 900
 aattcaattc attaaatgca accaccagag agcagttcac ttgttcatgg catctttaga 960
 aacaaactgc aattttattt catttccttg tcgttcatac aaagattaca agactagctt 1020
 atgtgtggac tgtgactggt ttaaggaaaa atcatgtcct cggctgggtt atcaagccaa 1080
 gctattttaa ggtgttttaa aagaaggat ggaaggaaga cctcttagga ccactgtggt 1140
 tttggataca agtgcctatt attttgttct cagtataatt gttccagata aaactatgat 1200
 ggatggctcg ttttcattta aattattaaa tcagcttgga atgattgaag agccaaggct 1260
 ttatgaagaa agataacata tgttaaagag gcacccttac tctaaacaac tagtgacttt 1320
 aaaagttcta agcgtatcag gagatggaga ccacccctgg taacatggtg aaaccctgtc 1380
 tctactaaaa attcagaaaa ttagctgggc atgggtggcac gtgcctgtag toccagctac 1440

260 265 270

Pro Cys Arg Ser Tyr Lys Asp Tyr Lys Thr Ser Leu Cys Val Asp Cys
275 280 285

Asp Cys Phe Lys Glu Lys Ser Cys Pro Arg Leu Gly Tyr Gln Ala Lys
290 295 300

Leu Phe Lys Gly Val Leu Lys Glu Arg Met Glu Gly Arg Pro Leu Arg
305 310 315 320

Thr Thr Val Phe Leu Asp Thr Ser Ala Tyr Tyr Phe Val Leu Ser Ile
325 330 335

Ile Val Pro Asp Lys Thr Met Met Asp Gly Ser Phe Ser Phe Lys Leu
340 345 350

Leu Asn Gln Leu Gly Met Ile Glu Glu Pro Arg Leu Tyr Glu Glu Arg
355 360 365

<210> 49
<211> 1221
<212> DNA
<213> Homo sapiens

<400> 49
ggaaaaagctg agaataatca cctctgataa agatcacaga agctgcccgg gaggtgtttg 60
attaaattca tgtattgaaa atattgttca gaccccatgt gacataactg gagccagtgc 120
agtgccatga agaactacga gattagcctg gatattaact tgtcttctag agaataagatt 180
tcatgttcca ttcttctgca atgggttaatt cacacagaaa accaatgttt aacattcaca 240
gaggatttta ctgcttaaca gccatcttgc cccaaatgat catttggtct cagttctcag 300
tgccatctag ttatcacttc actgaggatc ctggggcttt cccagtagcc actaatgggg 360
aacgatttcc ttggcaggag ctaaggctcc ccagtgtggt cattcctctc cattatgacc 420
tctttgtcca ccccaatctc acctctctgc actttgttgc atctgagaag atcgaagtct 480
tggtcagcaa tgctaccag tttatcatct tgcacagcaa agatcttgaa atcacgaatg 540
ccacccttca gtcagaggaa gattcaagat acatgaaacc aggaaaagaa ctgaaagtgt 600
tgagttaccc tgctcatgaa caaattgcac tgctgggtcc agagaaactt acgcctcacc 660
tgaaatacta tgtggctatg gacttccaag ccaagttagg tgatgggttt gaagggtttt 720
ataaaagcac atacagaact cttgggtggt aaacaagaat tcttgagta acagattttg 780
agccaaccca ggcacgcatg gctttccctt gctttgatga accgttggtc aaagccaact 840
tttcaatcaa gatacgaaga gagagcaggc atattgcact atccaacatg ccaaagggtg 900
ccatctatgc atcccagac aaacggaatc aaacacatta tgctttgcag gcatcactga 960
agctacttga tttttatgaa aagtactttg atatctacta tccactctcc aaactgggta 1020
tgttcaaatt ccacattatt gtcttcattt ttgctcataa aacttgctta gatctcttcc 1080
ctctttctct ttgtatgtga tttaaatgag cactgaggaa ttcagttagc tcaggaaaaa 1140
ataatttgtt cctcagagat gattcttgag tgtagaaaat aaaatattta tgacatgccc 1200
caaaaaaaaa aaaaaaaaaa a 1221

<210> 50
<211> 305
<212> PRT
<213> Homo sapiens

<400> 50
Met Phe His Ser Ser Ala Met Val Asn Ser His Arg Lys Pro Met Phe
1 5 10 15

Asn Ile His Arg Gly Phe Tyr Cys Leu Thr Ala Ile Leu Pro Gln Ile
20 25 30

Cys Ile Cys Ser Gln Phe Ser Val Pro Ser Ser Tyr His Phe Thr Glu
 35 40 45
 Asp Pro Gly Ala Phe Pro Val Ala Thr Asn Gly Glu Arg Phe Pro Trp
 50 55 60
 Gln Glu Leu Arg Leu Pro Ser Val Val Ile Pro Leu His Tyr Asp Leu
 65 70 75 80
 Phe Val His Pro Asn Leu Thr Ser Leu Asp Phe Val Ala Ser Glu Lys
 85 90 95
 Ile Glu Val Leu Val Ser Asn Ala Thr Gln Phe Ile Ile Leu His Ser
 100 105 110
 Lys Asp Leu Glu Ile Thr Asn Ala Thr Leu Gln Ser Glu Glu Asp Ser
 115 120 125
 Arg Tyr Met Lys Pro Gly Lys Glu Leu Lys Val Leu Ser Tyr Pro Ala
 130 135 140
 His Glu Gln Ile Ala Leu Leu Val Pro Glu Lys Leu Thr Pro His Leu
 145 150 155 160
 Lys Tyr Tyr Val Ala Met Asp Phe Gln Ala Lys Leu Gly Asp Gly Phe
 165 170 175
 Glu Gly Phe Tyr Lys Ser Thr Tyr Arg Thr Leu Gly Gly Glu Thr Arg
 180 185 190
 Ile Leu Ala Val Thr Asp Phe Glu Pro Thr Gln Ala Arg Met Ala Phe
 195 200 205
 Pro Cys Phe Asp Glu Pro Leu Phe Lys Ala Asn Phe Ser Ile Lys Ile
 210 215 220
 Arg Arg Glu Ser Arg His Ile Ala Leu Ser Asn Met Pro Lys Val Ser
 225 230 235 240
 Ile Tyr Ala Ser Pro Asp Lys Arg Asn Gln Thr His Tyr Ala Leu Gln
 245 250 255
 Ala Ser Leu Lys Leu Leu Asp Phe Tyr Glu Lys Tyr Phe Asp Ile Tyr
 260 265 270
 Tyr Pro Leu Ser Lys Leu Gly Met Phe Lys Phe His Ile Ile Val Phe
 275 280 285
 Ile Phe Ala His Lys Thr Cys Leu Asp Leu Phe Pro Leu Ser Leu Cys
 290 295 300
 Met
 305

<210> 51
 <211> 951
 <212> DNA
 <213> Homo sapiens

<400> 51
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 cccaccccgcc acccctttcc ccatcccggc tccgtcacc tcccgtcccc cacactcagg 120
 acaagaatgc cctgcccgga acaaccagc agcgcttaga tggctttggt cacggtccag 180
 cggtcaccta ccccagcac cacctccagc ccctgcgcct cggaggcaga cagtggggag 240
 gaagaatgcc ggtcacagcc caggagcatc agcgagagct ttctaactgt caaaggtgct 300
 gccctttttc taccacgggg aaatgggtca tccacaccaa gaatcagcca cagacggaac 360
 aagcatgcag gcgatctcca acagcatctc caagcaatgt tcattttact cgcgccagaa 420
 gacaacatca ggctggctgt aagactggaa agtacttacc agaatcgaa acgttatatg 480
 gtagtggttt caactaatgg tagacaagac actgaagaaa gcatcgtcct aggaatggat 540
 ttctctctta atgacagcac ttgtaccatg ggcttagttt tgcctctctg gagcgacacg 600
 ctaattcatt tggatggtga tgggtgggtc agtgtatcga cggataacag agttcacata 660
 ttcaaacctg tatctgtgca ggcaatgtgg gttgacaggg attcaaggaa caaacactgt 720
 gatgtactat tgggtggaaga atgaactgga gcagcctttc tggagagtga tttgccaata 780
 tgccttatca ttttgcata tctttgtcct agtaactcta tttctatgga tttactctaa 840
 gtttgtaaac atggatgtgt gcaaagattt tagctctaag aatgtttgtc agtggtctaa 900
 taatagcaaa aaataaaaaa caaatgattg aaaaataaaa aaaaaaaaaa a 951

<210> 52
 <211> 194
 <212> PRT
 <213> Homo sapiens

<400> 52
 Met Ala Leu Val Thr Val Gln Arg Ser Pro Thr Pro Ser Thr Thr Ser
 1 5 10 15
 Ser Pro Cys Ala Ser Glu Ala Asp Ser Gly Glu Glu Glu Cys Arg Ser
 20 25 30
 Gln Pro Arg Ser Ile Ser Glu Ser Phe Leu Thr Val Lys Gly Ala Ala
 35 40 45
 Leu Phe Leu Pro Arg Gly Asn Gly Ser Ser Thr Pro Arg Ile Ser His
 50 55 60
 Arg Arg Asn Lys His Ala Gly Asp Leu Gln Gln His Leu Gln Ala Met
 65 70 75 80
 Phe Ile Leu Leu Arg Pro Glu Asp Asn Ile Arg Leu Ala Val Arg Leu
 85 90 95
 Glu Ser Thr Tyr Gln Asn Arg Thr Arg Tyr Met Val Val Val Ser Thr
 100 105 110
 Asn Gly Arg Gln Asp Thr Glu Glu Ser Ile Val Leu Gly Met Asp Phe
 115 120 125
 Ser Ser Asn Asp Ser Thr Cys Thr Met Gly Leu Val Leu Pro Leu Trp
 130 135 140
 Ser Asp Thr Leu Ile His Leu Asp Gly Asp Gly Gly Phe Ser Val Ser
 145 150 155 160
 Thr Asp Asn Arg Val His Ile Phe Lys Pro Val Ser Val Gln Ala Met
 165 170 175
 Trp Val Asp Arg Asp Ser Arg Asn Lys His Cys Asp Val Leu Leu Val
 180 185 190

Glu Glu

<210> 53
<211> 1514
<212> DNA
<213> Homo sapiens

<400> 53
gcatgatatt tttacggttc acccatattg catgtatcag gaatataatc ctttttatta 60
ttgagtagtg ttctattgta tgtatatacc acagtttatt tctcccttca tcttttgcta 120
gattttgggg ttttttcaca ttgcgctatt cagtataaac ctgctctcaa cattcatgtg 180
caagtctttg agtggacata tatttgcggt tctcttgagt gaatgcacct tgttgggtca 240
cgtggcttaa cttaaaaaaa ttttaatcac tgtggtgcat atgtagtgat tatttagtgat 300
tatctcataa ttttattttc ttgtttaatg atgttgagtg tatttcattt gtatttttagt 360
ttgcaaagt ttgttcaaat tcttcacctg tttttaatga agacgtacga cttatttttg 420
tgttctgaac ataagttctt tgtcacataa aatgtgctat gaatgttgag ttttaataac 480
tccaaatgaa tggctagaga attactatct gtagaaatat ttatatgtca aagggatgct 540
aacaattttac tttattgctc taaaatagaa aagttgccag aatgctgtgg agtttttagtg 600
gaaaacatga tagctggtgt tactgagtaa atttgagtg taaatgtcaa tgtaagctaa 660
cggccaagat agggaccact gcagggtggt tacttgacgc tgtgactcaa ctggctcttc 720
actgcctaac atacctgggg ttggatcatt ggcctgacgt ttgcaaattg aggaacctta 780
gggcaaatca gtgaacttct gaactgcctt cgtcttcagt tatatgggga tttccctact 840
tttgagatcc ttgtaaggat tatatgagat gaagagatga gacaagggtat ataaaagtcc 900
tagcacagag cgtgtcatat aatatggctt cacaagtacc ctcactctct ttcagtcgt 960
tttttgtttt tgtttttgtt tttttgagac catctcactc tgttgcccag gctggagtgc 1020
ctcttcattt ttatttcttt attcagcaag tattgatcaa atgtgctttg taccagggtac 1080
tgagctcttc gttgggatat aatggtgatc aaggagattg tagattctgg cagggaaaac 1140
tgacatcaaa cacggcgacc cgacatagtg agacctgtc tctactagaa gaacttttaa 1200
aatcacctag gtgtgggccc ggcacggttg ctaacgcctg tggctccagc actttgggat 1260
gctgaggcgg gtggatcacg gggtcaggag atcgagacca tctgggataa cacggagaaa 1320
ccccgtctct actggaaata caaggaaatt ggccgggcgt gggggcgggc atctgtggtc 1380
ccaattactc gggaggctgc agcaggagag tggcatgaac cggggaggcg gatcttgcat 1440
tgagccgaga tcacgccact gcactccagc ctgggcgaca gaatgagact ccatctcaaa 1500
aaaaaaaaaa aaaa 1514

<210> 54
<211> 91
<212> PRT
<213> Homo sapiens

<400> 54
Met Ala Ser Gln Val Pro Ser Ser Pro Phe Gln Ser Phe Phe Val Phe
1 5 10 15
Val Phe Val Phe Leu Arg Pro Ser His Ser Val Ala Gln Ala Gly Val
20 25 30
Pro Leu His Phe Tyr Phe Phe Ile Gln Gln Val Leu Ile Lys Cys Ala
35 40 45
Leu Tyr Gln Val Leu Ser Ser Ser Leu Gly Tyr Asn Gly Asp Gln Gly
50 55 60
Asp Cys Arg Phe Trp Gln Gly Lys Leu Thr Ser Asn Thr Ala Thr Arg
65 70 75 80
His Ser Glu Thr Leu Ser Leu Leu Glu Glu Leu

<210> 55
 <211> 1417
 <212> DNA
 <213> Homo sapiens

<400> 55
 gtccaaatcc tattgtccac agtcagactt ctacaacctc ctctgaacaa atgcagcctc 60
 caatgtttca ctctcaaagt accattgctg tggttacaggg ctcttcagtt cctcaagacc 120
 agcagtcaac caacatattt ctttcccgaga gtcccatgaa taatcttcag actaacacag 180
 tagcccaaga agcatttttt gcagcaccga actcaatttc tccacttcag tcaacatcaa 240
 acagtgaaca acaagctgct ttccaacagc aagctccaat atcacacatc cagactccta 300
 tgctttccca agaacaggca caacccccgc agcagggttt atttcagcct caggtggccc 360
 tgggctccct tccacctaata ccaatgcctc aaagccaaca aggaaccatg ttccagtcac 420
 agcactcaat agttgccatg cagagtaact ctccatccca ggaacagcag cagcagcagc 480
 aacagcagca gcaacagcag cagcaacaac aacagagcat tttattcagt aatcagaata 540
 ccattgctac aatggcgtct ccaaagcaac caccaccaa catgatattc aaccctaatc 600
 aaaatccaat ggctaatacag gagcaacaga accagtcaat ttttcaccaa caaagtaaca 660
 tggccccaat gaatacaagag caacagccca tgcaatttca gagtcagtc acagtttctc 720
 cacttcagaa cccaggctct acccagtcgg aatcatcaca gaccccttg ttccatagct 780
 ctctcagat tcagttggta caagggtcac ctgatttctca agagcagcaa gtaactctct 840
 tcttatctcc agcatccatg tctgccttgc agaccagtat aaatcaacaa gatatgcaac 900
 agtctctctt ttattccctt cagaacaaca tgcctggaat tcaaggagcc acattttctc 960
 ctcaaccaca ggctaacttta tttcacaaac cagcaggagg cacaatgaac caactgcaga 1020
 attctcttgg ctcatctcag cagacatcag gaatgttctt atttggcatt caaaataact 1080
 gtagtcagct ttaacctctt ggaccagcta cattgcctga tcagttgatg gccataagtc 1140
 agccaggcca accacaaaac gagggccagc cactgtgac aacacttctt tctcagcaaa 1200
 tgccagagaa ttctccactg gcactctcta taaacaccaa ccagaacatc gaaaagattg 1260
 atttgcttgt ttcatgtcaa aaccaaggga acaacttgac tggctccttt taactggata 1320
 taaattccac gaagaaaatc ctgattccaa gatgtcctga gatcttgttg ttccatgaga 1380
 attattactt taaaaacaaa acaaaaaaaaa aaaaaaa 1417

<210> 56
 <211> 420
 <212> PRT
 <213> Homo sapiens

<400> 56
 Met Gln Pro Pro Met Phe His Ser Gln Ser Thr Ile Ala Val Leu Gln
 1 5 10 15
 Gly Ser Ser Val Pro Gln Asp Gln Gln Ser Thr Asn Ile Phe Leu Ser
 20 25 30
 Gln Ser Pro Met Asn Asn Leu Gln Thr Asn Thr Val Ala Gln Glu Ala
 35 40 45
 Phe Phe Ala Ala Pro Asn Ser Ile Ser Pro Leu Gln Ser Thr Ser Asn
 50 55 60
 Ser Glu Gln Gln Ala Ala Phe Gln Gln Gln Ala Pro Ile Ser His Ile
 65 70 75 80
 Gln Thr Pro Met Leu Ser Gln Glu Gln Ala Gln Pro Pro Gln Gln Gly
 85 90 95
 Leu Phe Gln Pro Gln Val Ala Leu Gly Ser Leu Pro Pro Asn Pro Met
 100 105 110

Pro Gln Ser Gln Gln Gly Thr Met Phe Gln Ser Gln His Ser Ile Val
115 120 125

Ala Met Gln Ser Asn Ser Pro Ser Gln Glu Gln Gln Gln Gln Gln
130 135 140

Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ser Ile Leu Phe Ser
145 150 155 160

Asn Gln Asn Thr Met Ala Thr Met Ala Ser Pro Lys Gln Pro Pro Pro
165 170 175

Asn Met Ile Phe Asn Pro Asn Gln Asn Pro Met Ala Asn Gln Glu Gln
180 185 190

Gln Asn Gln Ser Ile Phe His Gln Gln Ser Asn Met Ala Pro Met Asn
195 200 205

Gln Glu Gln Gln Pro Met Gln Phe Gln Ser Gln Ser Thr Val Ser Ser
210 215 220

Leu Gln Asn Pro Gly Pro Thr Gln Ser Glu Ser Ser Gln Thr Pro Leu
225 230 235 240

Phe His Ser Ser Pro Gln Ile Gln Leu Val Gln Gly Ser Pro Ser Ser
245 250 255

Gln Glu Gln Gln Val Thr Leu Phe Leu Ser Pro Ala Ser Met Ser Ala
260 265 270

Leu Gln Thr Ser Ile Asn Gln Gln Asp Met Gln Gln Ser Pro Leu Tyr
275 280 285

Ser Pro Gln Asn Asn Met Pro Gly Ile Gln Gly Ala Thr Phe Ser Pro
290 295 300

Gln Pro Gln Ala Thr Leu Phe His Asn Thr Ala Gly Gly Thr Met Asn
305 310 315 320

Gln Leu Gln Asn Ser Pro Gly Ser Ser Gln Gln Thr Ser Gly Met Phe
325 330 335

Leu Phe Gly Ile Gln Asn Asn Cys Ser Gln Leu Leu Thr Ser Gly Pro
340 345 350

Ala Thr Leu Pro Asp Gln Leu Met Ala Ile Ser Gln Pro Gly Gln Pro
355 360 365

Gln Asn Glu Gly Gln Pro Pro Val Thr Thr Leu Leu Ser Gln Gln Met
370 375 380

Pro Glu Asn Ser Pro Leu Ala Ser Ser Ile Asn Thr Asn Gln Asn Ile
385 390 395 400

Glu Lys Ile Asp Leu Leu Val Ser Leu Gln Asn Gln Gly Asn Asn Leu
405 410 415

Thr Gly Ser Phe
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<210> 57
 <211> 2297
 <212> DNA
 <213> Homo sapiens

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 <211> 378
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Gly Thr Leu Leu Met Lys Arg Lys Phe Glu Glu Pro Arg Pro Gly Phe
 50 55 60
 His Gly Val Leu Gly Ile Asn Ser Ile Thr Gly Lys Glu Glu Pro Leu
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 Tyr Pro Ser Tyr Lys Arg Gln Leu Arg Ile Tyr Leu Val Ser Leu Pro
 85 90 95
 Phe Val Cys Leu Cys Leu Tyr Phe Ser Leu Tyr Val Met Met Ile Tyr
 100 105 110
 Phe Asp Met Glu Val Trp Ala Leu Gly Leu His Glu Asn Ser Gly Ser
 115 120 125
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 Thr Ser Trp Glu Asn His Arg Leu Glu Ser Ala Tyr Gln Asn His Leu
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 Ile Leu Lys Val Leu Val Phe Asn Phe Leu Asn Cys Phe Ala Ser Leu
 180 185 190
 Phe Tyr Ile Ala Phe Val Leu Lys Asp Met Lys Leu Leu Arg Gln Ser
 195 200 205
 Leu Ala Thr Leu Leu Ile Thr Ser Gln Ile Leu Asn Gln Ile Met Glu
 210 215 220
 Ser Phe Leu Pro Tyr Trp Leu Gln Arg Lys His Gly Val Gln Val Lys
 225 230 235 240
 Arg Lys Val Gln Ala Leu Lys Ala Asp Ile Asp Ala Thr Leu Tyr Glu
 245 250 255
 Gln Val Ile Leu Glu Lys Glu Met Gly Thr Tyr Leu Gly Thr Phe Asp
 260 265 270
 Asp Tyr Leu Glu Leu Phe Leu Gln Phe Gly Tyr Val Ser Leu Phe Ser
 275 280 285
 Cys Val Tyr Pro Leu Ala Ala Ala Phe Ala Val Leu Asn Asn Phe Thr
 290 295 300
 Glu Val Asn Ser Asp Ala Leu Lys Met Cys Arg Val Phe Lys Arg Pro
 305 310 315 320
 Phe Ser Glu Pro Ser Ala Asn Ile Gly Val Trp Gln Met Ile Phe Cys
 325 330 335
 Leu Asp Thr Gly Val Lys Arg Gly Leu Asn Cys Lys Val Met Arg Asn
 340 345 350

Leu Leu Gly Glu Met Glu Met Ser Cys Val Leu Phe Val Val Val Val
 355 360 365

Val Ser Gln Val Asn Thr Pro Ile Lys Arg
 370 375

<210> 59
 <211> 4145
 <212> DNA
 <213> Homo sapiens

<400> 59

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 <211> 289
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Asn Ile Gln Val Ser His Gln Glu Phe Ser Lys Met Lys Gln Ser Asn
 50 55 60
 Asn Glu Ala Asn Leu Arg Glu Glu Val Leu Lys Asn Leu Ala Thr Ala
 65 70 75 80
 Tyr Asp Asn Phe Val Glu Leu Val Ala Asn Leu Lys Glu Gly Thr Lys
 85 90 95
 Phe Tyr Asn Glu Leu Thr Glu Ile Leu Val Arg Phe Gln Asn Lys Cys
 100 105 110
 Ser Asp Ile Val Phe Ala Arg Lys Thr Glu Arg Asp Glu Leu Leu Lys
 115 120 125
 Asp Leu Gln Gln Ser Ile Ala Arg Glu Pro Ser Ala Pro Ser Ile Pro
 130 135 140
 Thr Pro Ala Tyr Gln Ser Ser Pro Ala Gly Gly His Ala Pro Thr Pro
 145 150 155 160

Pro Thr Pro Ala Pro Arg Thr Met Pro Pro Thr Lys Pro Gln Pro Pro
165 170 175

Ala Arg Pro Pro Pro Pro Val Leu Pro Ala Asn Arg Ala Pro Ser Ala
180 185 190

Thr Ala Pro Ser Pro Val Gly Ala Gly Thr Ala Ala Pro Ala Pro Ser
195 200 205

Gln Thr Pro Gly Ser Ala Pro Pro Pro Gln Ala Gln Gly Pro Pro Tyr
210 215 220

Pro Thr Tyr Pro Gly Tyr Pro Gly Tyr Cys Gln Met Pro Met Pro Met
225 230 235 240

Gly Tyr Asn Pro Tyr Ala Tyr Gly Gln Tyr Asn Met Pro Tyr Pro Pro
245 250 255

Val Tyr His Gln Ser Pro Gly Gln Ala Pro Tyr Pro Gly Pro Gln Gln
260 265 270

Pro Ser Tyr Pro Phe Pro Gln Pro Pro Gln Gln Ser Tyr Tyr Pro Gln
275 280 285

Gln

<210> 61
<211> 1417
<212> DNA
<213> Homo sapiens

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<210> 62

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Thr Lys Asp Val Thr Val Ile Glu Gly Glu Val Ala Thr Ile Ser Cys
50 55 60

Gln Val Asn Lys Ser Asp Asp Ser Val Ile Gln Leu Leu Asn Pro Asn
65 70 75 80

Arg Gln Thr Ile Tyr Phe Arg Asp Phe Arg Pro Leu Lys Asp Ser Arg
85 90 95

Phe Gln Leu Leu Asn Phe Ser Ser Ser Glu Leu Lys Val Ser Leu Thr
100 105 110

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Asn Val Ser Ile Ser Asp Glu Gly Arg Tyr Phe Cys Gln Leu Tyr Thr
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130 135 140

Arg Asn Leu Met Ile Asp Ile Gln Lys Asp Thr Ala Val Glu Gly Glu
145 150 155 160

Glu Ile Glu Val Asn Cys Thr Ala Met Ala Ser Lys Pro Ala Thr Thr
165 170 175

Ile Arg Trp Phe Lys Gly Asn Thr Glu Leu Lys Gly Lys Ser Glu Val
180 185 190

Glu Glu Trp Ser Asp Met Tyr Thr Val Thr Ser Gln Leu Met Leu Lys
195 200 205

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210						215					220				

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225 230 235 240

Tyr Lys Pro Gln Val His Ile Gln Met Thr Tyr Pro Leu Gln Gly Leu
245 250 255

Thr Arg Glu Gly Asp Ala Leu Glu Leu Thr Cys Glu Ala Ile Gly Lys
260 265 270

Pro	Gln	Pro	Val	Met	Val	Thr	Trp	Val	Arg	Val	Asp	Asp	Glu	Met	Pro
		275					280					285			

Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn Asn Leu Asn

290

295

300

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305 310 315 320

Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Ser Arg Ala Gly
325 330 335

Glu Glu Gly Ser Ile Arg Ala Val Asp His Ala Val Ile Gly Gly Val
340 345 350

Val Ala Val Val Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly
355 360 365

Arg Tyr Phe Ala Arg His Lys Gly Thr Tyr Phe Thr His Glu Ala Lys
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Gly Ala Asp Asp Ala Ala Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu
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<210> 63

<211> 1571

<212> DNA

<213> Homo sapiens

<400> 63

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<210> 64

<211> 417

<212> PRT

<213> Homo sapiens

<400> 64

Met Pro Leu Tyr Glu Gly Leu Gly Ser Gly Gly Glu Lys Thr Ala Val
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Val Ile Asp Leu Gly Glu Ala Phe Thr Lys Cys Gly Phe Ala Gly Glu
20 25 30

Thr Gly Pro Arg Cys Ile Ile Pro Ser Val Ile Lys Arg Ala Gly Met
35 40 45

Pro Lys Pro Val Arg Val Val Gln Tyr Asn Ile Asn Thr Glu Glu Leu
50 55 60

Tyr Ser Tyr Leu Lys Glu Phe Ile His Ile Leu Tyr Phe Arg His Leu
65 70 75 80

Leu Val Asn Pro Arg Asp Arg Arg Val Val Ile Ile Glu Ser Val Leu
85 90 95

Cys Pro Ser His Phe Arg Glu Thr Leu Thr Arg Val Leu Phe Lys Tyr
100 105 110

Phe Glu Val Pro Ser Val Leu Leu Ala Pro Ser His Leu Met Ala Leu
115 120 125

Leu Thr Leu Gly Ile Asn Ser Ala Met Val Leu Asp Cys Gly Tyr Arg
130 135 140

Glu Ser Leu Val Leu Pro Ile Tyr Glu Gly Ile Pro Val Leu Asn Cys
145 150 155 160

Trp Gly Ala Leu Pro Leu Gly Gly Lys Ala Leu His Lys Glu Leu Glu
165 170 175

Thr Gln Leu Leu Glu Gln Cys Thr Val Asp Thr Ser Val Ala Lys Glu
180 185 190

Gln Ser Leu Pro Ser Val Met Gly Ser Val Pro Glu Gly Val Leu Glu
195 200 205

Asp Ile Lys Ala Arg Thr Cys Phe Val Ser Asp Leu Lys Arg Gly Leu
210 215 220

Lys Ile Gln Ala Ala Lys Phe Asn Ile Asp Gly Asn Asn Glu Arg Pro
225 230 235 240

Ser Pro Pro Pro Asn Val Asp Tyr Pro Leu Asp Gly Glu Lys Ile Leu
245 250 255

His Ile Leu Gly Ser Ile Arg Asp Ser Val Val Glu Ile Leu Phe Glu
260 265 270

Gln Asp Asn Glu Glu Gln Ser Val Ala Thr Leu Ile Leu Asp Ser Leu
275 280 285

Ile Gln Cys Pro Ile Asp Thr Arg Lys Gln Leu Ala Glu Asn Leu Val
290 295 300

Val Ile Gly Gly Thr Ser Met Leu Pro Gly Phe Leu His Arg Leu Leu
 305 310 315 320

Ala Glu Ile Arg Tyr Leu Val Glu Lys Pro Lys Tyr Lys Lys Ala Leu
 325 330 335

Gly Thr Lys Thr Phe Arg Ile His Thr Pro Pro Ala Lys Ala Asn Cys
 340 345 350

Val Ala Trp Leu Gly Gly Ala Ile Phe Gly Ala Leu Gln Asp Ile Leu
 355 360 365

Gly Ser Arg Ser Val Ser Lys Glu Tyr Tyr Asn Gln Thr Gly Arg Ile
 370 375 380

Pro Asp Trp Cys Ser Leu Asn Asn Pro Pro Leu Glu Met Met Phe Asp
 385 390 395 400

Val Gly Lys Thr Gln Pro Pro Leu Met Lys Arg Ala Phe Ser Thr Glu
 405 410 415

Lys

<210> 65
 <211> 1752
 <212> DNA
 <213> Homo sapiens

<400> 65
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<210> 66
 <211> 254
 <212> PRT
 <213> Homo sapiens

<400> 66
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 20 25 30
 Ala Phe Leu Phe Cys Ile Leu Trp Ser Leu Leu Phe His Phe Lys Glu
 35 40 45
 Thr Thr Ala Thr His Cys Gly Val Pro Asn Tyr Leu Pro Ser Val Ser
 50 55 60
 Ser Ala Ile Gly Gly Glu Val Pro Gln Arg Tyr Val Trp Arg Phe Cys
 65 70 75 80
 Ile Gly Leu His Ser Ala Pro Arg Phe Leu Val Ala Phe Ala Tyr Trp
 85 90 95
 Asn His Tyr Leu Ser Cys Thr Ser Pro Cys Ser Cys Tyr Arg Pro Leu
 100 105 110
 Cys Arg Leu Asn Phe Gly Leu Asn Val Val Glu Asn Leu Ala Leu Leu
 115 120 125
 Val Leu Thr Tyr Val Ser Ser Ser Glu Asp Phe Thr Ile His Glu Asn
 130 135 140
 Ala Phe Ile Val Phe Ile Ala Ser Ser Leu Gly His Met Leu Leu Thr
 145 150 155 160
 Cys Ile Leu Trp Arg Leu Thr Lys Lys His Thr Val Ser Gln Glu Asp
 165 170 175
 Arg Lys Ser Tyr Ser Trp Lys Gln Arg Leu Phe Ile Ile Asn Phe Ile
 180 185 190
 Ser Phe Phe Ser Ala Leu Ala Val Tyr Phe Arg His Asn Met Tyr Cys
 195 200 205
 Glu Ala Gly Val Tyr Thr Ile Phe Ala Ile Leu Glu Tyr Thr Val Val
 210 215 220
 Leu Thr Asn Met Ala Phe His Met Thr Ala Trp Trp Asp Phe Gly Asn
 225 230 235 240
 Lys Glu Leu Leu Ile Thr Ser Gln Pro Glu Glu Lys Arg Phe
 245 250

<210> 67
 <211> 781

<212> DNA
<213> Homo sapiens

<400> 67
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taaaaacacc agtttagtaa ccatttttat gatttggaat accatgatgg gaacatctat 180
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gttttcattg gataccacta cctgggaata tccagatgtc tgcagacatt atttcggctc 360
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a 781

<210> 68
<211> 127
<212> PRT
<213> Homo sapiens

<400> 68
Met Ile Trp Asn Thr Met Met Gly Thr Ser Ile Leu Ser Ile Pro Trp
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Gly Ile Lys Gln Ala Gly Phe Thr Thr Gly Met Cys Val Ile Ile Leu
20 25 30
Met Gly Leu Leu Thr Leu Tyr Cys Cys Tyr Arg Val Val Lys Ser Arg
35 40 45
Thr Met Met Phe Ser Leu Asp Thr Thr Thr Trp Glu Tyr Pro Asp Val
50 55 60
Cys Arg His Tyr Phe Gly Ser Phe Gly Gln Trp Ser Ser Leu Leu Phe
65 70 75 80
Ser Leu Val Ser Leu Ile Gly Ala Met Ile Val Tyr Trp Val Leu Met
85 90 95
Ser Asn Phe Leu Phe Asn Thr Gly Lys Phe Ile Phe Ser Lys Tyr Leu
100 105 110
Tyr His Met Leu Leu Thr Gln Tyr Phe Gln Ile Leu Leu Pro Leu
115 120 125

<210> 69
<211> 649
<212> DNA
<213> Homo sapiens

<400> 69
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gaaccccagg ggaaggtgca atacggagag cactttcgga ttcggcagaa tctaccagag 180
cacacccaag gctggcttgg gagcaaattg ctctggcttc tttttgttgt tgtgccgttt 240

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cgaggcgcc aacttcactc tccattaaag aaaaaaagaa atgcttcccc caacaaagac 360
tgtgcattca ataccttaat ggaactcgag gtggagctta tgaaatttgt gtccaaagtg 420
cggaatctta aacgtgccat ggcaacaggt agtggcagta acctcaggct tcgaaagtca 480
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actaataaaa ctattctgaa gaaaagaaaa aaaaaaaaaa aaaaaaaaaa 649

<210> 70
<211> 171
<212> PRT
<213> Homo sapiens

<400> 70
Met Trp Thr Leu Lys Ser Ser Leu Val Leu Leu Leu Cys Leu Thr Cys
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Ser Tyr Ala Phe Met Phe Ser Ser Leu Arg Gln Lys Thr Ser Glu Pro
20 25 30
Gln Gly Lys Val Gln Tyr Gly Glu His Phe Arg Ile Arg Gln Asn Leu
35 40 45
Pro Glu His Thr Gln Gly Trp Leu Gly Ser Lys Trp Leu Trp Leu Leu
50 55 60
Phe Val Val Val Pro Phe Val Ile Leu Gln Cys Gln Arg Asp Ser Glu
65 70 75 80
Lys Asn Lys Glu Gln Ser Pro Pro Gly Leu Arg Gly Gly Gln Leu His
85 90 95
Ser Pro Leu Lys Lys Lys Arg Asn Ala Ser Pro Asn Lys Asp Cys Ala
100 105 110
Phe Asn Thr Leu Met Glu Leu Glu Val Glu Leu Met Lys Phe Val Ser
115 120 125
Lys Val Arg Asn Leu Lys Arg Ala Met Ala Thr Gly Ser Gly Ser Asn
130 135 140
Leu Arg Leu Arg Lys Ser Glu Met Pro Ala Asp Pro Tyr His Val Thr
145 150 155 160
Ile Cys Glu Ile Trp Gly Glu Glu Ser Ser Ser
165 170

<210> 71
<211> 1456
<212> DNA
<213> Homo sapiens

<400> 71
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tcgggcactt gtctcaccgt ggatgggtcat catcataaaa atgaggagag ctggcacgat 120
gggtgcccggg aatgctactg tctcaatgga cgggaaatgt gtgcctgat cacctgcccg 180
gtgcctgcct gtggcaaccc caccattcac cctggacagt gctgccatc atgtgcagat 240
gactttgtgg tgcagaagcc agagctcagt actccctcca tttgccacgc cctggagga 300
gaatactttg tggaaggaga aacgtggaac attgactcct gtactcagt cacctgccac 360

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cgcaataaca gcgtacctaa ttattgcaaa aatgatgaag gggatatatt cctggcagct 540
gagtcttgga agcctgacgt ttgtaccagc tgcatctgca ttgatagcgt aattagctgt 600
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<210> 72
<211> 400
<212> PRT
<213> Homo sapiens

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<400> 72
Met Cys Ala Leu Ile Thr Cys Pro Val Pro Ala Cys Gly Asn Pro Thr
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Ile His Pro Gly Gln Cys Cys Pro Ser Cys Ala Asp Asp Phe Val Val
      20             25             30

Gln Lys Pro Glu Leu Ser Thr Pro Ser Ile Cys His Ala Pro Gly Gly
      35             40             45

Glu Tyr Phe Val Glu Gly Glu Thr Trp Asn Ile Asp Ser Cys Thr Gln
      50             55             60

Cys Thr Cys His Ser Gly Arg Val Leu Cys Glu Thr Glu Val Cys Pro
      65             70             75             80

Pro Leu Leu Cys Gln Asn Pro Ser Arg Thr Gln Asp Ser Cys Cys Pro
      85             90             95

Gln Cys Thr Asp Gln Pro Phe Arg Pro Ser Leu Ser Arg Asn Asn Ser
      100            105            110

Val Pro Asn Tyr Cys Lys Asn Asp Glu Gly Asp Ile Phe Leu Ala Ala
      115            120            125

Glu Ser Trp Lys Pro Asp Val Cys Thr Ser Cys Ile Cys Ile Asp Ser
      130            135            140

Val Ile Ser Cys Phe Ser Glu Ser Cys Pro Ser Val Ser Cys Glu Arg
      145            150            155            160

Pro Val Leu Arg Lys Gly Gln Cys Cys Pro Tyr Cys Ile Glu Asp Thr
      165            170            175

Ile Pro Lys Lys Val Val Cys His Phe Ser Gly Lys Ala Tyr Ala Asp

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0030644 050699

180

185

190

Glu Glu Arg Trp Asp Leu Asp Ser Cys Thr His Cys Tyr Cys Leu Gln
195 200 205

Gly Gln Thr Leu Cys Ser Thr Val Ser Cys Pro Pro Leu Pro Cys Val
210 215 220

Glu Pro Ile Asn Val Glu Gly Ser Cys Cys Pro Met Cys Pro Glu Met
225 230 235 240

Tyr Val Pro Glu Pro Thr Asn Ile Pro Ile Glu Lys Thr Asn His Arg
245 250 255

Gly Glu Val Asp Leu Glu Val Pro Leu Trp Pro Thr Pro Ser Glu Asn
260 265 270

Asp Ile Val His Leu Pro Arg Asp Met Gly His Leu Gln Val Asp Tyr
275 280 285

Arg Asp Asn Arg Leu His Pro Ser Glu Asp Ser Ser Leu Asp Ser Ile
290 295 300

Ala Ser Val Val Val Pro Ile Ile Ile Cys Leu Ser Ile Ile Ile Ala
305 310 315 320

Phe Leu Phe Ile Asn Gln Lys Lys Gln Trp Ile Pro Leu Leu Cys Trp
325 330 335

Tyr Arg Thr Pro Thr Lys Pro Ser Ser Leu Asn Asn Gln Leu Val Ser
340 345 350

Val Asp Cys Lys Lys Gly Thr Arg Val Gln Val Asp Ser Ser Gln Arg
355 360 365

Met Leu Arg Ile Ala Glu Pro Asp Ala Arg Phe Ser Gly Phe Tyr Ser
370 375 380

Met Gln Lys Gln Asn His Leu Gln Ala Asp Asn Phe Tyr Gln Thr Val
385 390 395 400

<210> 73

<211> 4723

<212> DNA

<213> Homo sapiens

<400> 73

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575

Pro Thr Asn Ile Pro Ile Glu Lys Thr Asn His Arg Gly Glu Val Asp

885

890

895

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Leu Pro Arg Asp Met Gly His Leu Gln Val Asp Tyr Arg Asp Asn Arg
915 920 925

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Asn Gln Lys Lys Gln Trp Ile Pro Leu Leu Cys Trp Tyr Arg Thr Pro
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Thr Lys Pro Ser Ser Leu Asn Asn Gln Leu Val Ser Val Asp Cys Lys
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Lys Gly Thr Arg Val Gln Val Asp Ser Ser Gln Arg Met Leu Arg Ile
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<211> 3861

<212> DNA

<213> Homo sapiens

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<212> PRT
<213> Homo sapiens
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 Pro Asn Val His Cys Leu Ser Pro Val His Ile Pro His Leu Cys Cys
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 Pro Arg Cys Pro Asp Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser
 100 105 110
 Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe
 115 120 125
 Val Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro Asn Gln Cys Thr Gln
 130 135 140
 Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro
 145 150 155 160
 Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg
 165 170 175
 Val Cys Arg Gly Asp Gly Glu Leu Ser Trp Glu His Ser Asp Gly Asp
 180 185 190
 Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg His Ser Tyr His Arg
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 Ser His Tyr Asp Pro Pro Pro Ser Arg Gln Ala Gly Gly Leu Ser Arg
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 Phe Pro Gly Ala Arg Ser His Arg Gly Ala Leu Met Asp Ser Gln Gln
 225 230 235 240
 Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn Asn Lys His Lys His
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 Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser
 260 265 270
 Trp His Pro Asn Leu Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys
 275 280 285
 Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn
 290 295 300
 Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys
 305 310 315 320
 Val Cys Pro Gly Lys Lys Ala Lys Glu Glu Leu Pro Gly Gln Ser Phe
 325 330 335
 Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu Thr Met Pro Val Tyr Glu
 340 345 350
 Ser Val Phe Met Glu Asp Gly Glu Thr Thr Arg Lys Ile Ala Leu Glu
 355 360 365
 Thr Glu Arg Pro Pro Gln Val Glu Val His Val Trp Thr Ile Arg Lys
 370 375 380

Gly Ile Leu Gln His Phe His Ile Glu Lys Ile Ser Lys Arg Met Phe
385 390 395 400

Glu Glu Leu Pro His Phe Lys Leu Val Thr Arg Thr Thr Leu Ser Gln
405 410 415

Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln Ile Ser Gln Met Cys Ser
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Ser Arg Val Cys Arg Thr Glu Leu Glu Asp Leu Val Lys Val Leu Tyr
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Leu Glu Arg Ser Glu Lys Gly His Cys
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<211> 2050
<212> DNA
<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 78

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Glu Gly Val Phe Tyr Val Asn Asp Ala Leu Glu Lys Leu Met Phe Glu
35 40 45

Glu Leu Arg Asn Ala Cys Arg Gly Gly Gly Val Gly Gly Phe Leu Pro
50 55 60

Ala Met Lys Gln Ile Gly Asn Val Ala Ala Leu Pro Gly Ile Val His
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Arg Ser Ile Gly Leu Pro Asp Val His Ser Gly Tyr Gly Phe Ala Ile
85 90 95

Gly Asn Met Ala Ala Phe Asp Met Asn Asp Pro Glu Ala Val Val Ser
100 105 110

Pro Gly Gly Val Gly Phe Asp Ile Asn Cys Gly Val Arg Leu Leu Arg
115 120 125

Thr Asn Leu Asp Glu Ser Asp Val Gln Pro Val Lys Glu Gln Leu Ala
130 135 140

Gln Ala Met Phe Asp His Ile Pro Val Gly Val Gly Ser Lys Gly Val
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Ile Pro Met Asn Ala Lys Asp Leu Glu Glu Ala Leu Glu Met Gly Val
165 170 175

Asp Trp Ser Leu Arg Glu Gly Tyr Ala Trp Ala Glu Asp Lys Glu His
180 185 190

Cys Glu Glu Tyr Gly Arg Met Leu Gln Ala Asp Pro Asn Lys Val Ser
195 200 205

Ala Arg Ala Lys Lys Arg Gly Leu Pro Gln Leu Gly Thr Leu Gly Ala
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Gly Asn His Tyr Ala Glu Ile Gln Val Val Asp Glu Ile Phe Asn Glu
225 230 235 240

Tyr Ala Ala Lys Lys Met Gly Ile Asp His Lys Gly Gln Val Cys Val
245 250 255

Met Ile His Ser Gly Ser Arg Gly Leu Gly His Gln Val Ala Thr Asp
260 265 270

Ala Leu Val Ala Met Glu Lys Ala Met Lys Arg Asp Lys Ile Ile Val
275 280 285

Asn Asp Arg Gln Leu Ala Cys Ala Arg Ile Ala Ser Pro Glu Gly Gln
290 295 300

Asp Tyr Leu Lys Gly Met Ala Ala Ala Gly Asn Tyr Ala Trp Val Asn
305 310 315 320

Arg Ser Ser Met Thr Phe Leu Thr Arg Gln Ala Phe Ala Lys Val Phe
325 330 335

Asn Thr Thr Pro Asp Asp Leu Asp Leu His Val Ile Tyr Asp Val Ser
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His Asn Ile Ala Lys Val Glu Gln His Val Val Asp Gly Lys Glu Arg
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Thr Leu Leu Val His Arg Lys Gly Ser Thr Arg Ala Phe Pro Pro His
370 375 380

His Pro Leu Ile Ala Val Asp Tyr Gln Leu Thr Gly Gln Pro Val Leu
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Ile Gly Gly Thr Met Gly Thr Cys Ser Tyr Val Leu Thr Gly Thr Glu
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Gln Gly Met Thr Glu Thr Phe Gly Thr Thr Cys His Gly Ala Gly Arg
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Ala Leu Ser Arg Ala Lys Ser Arg Arg Asn Leu Asp Phe Gln Asp Val
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Leu Asp Lys Leu Ala Asp Met Gly Ile Ala Ile Arg Val Ala Ser Pro
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Lys Leu Val Met Glu Glu Ala Pro Glu Ser Tyr Lys Asn Val Thr Asp
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Leu Arg Pro Ile Ala Val Ile Lys Gly
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<212> DNA
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<212> PRT

<213> Homo sapiens

<400> 80

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 35 40 45
 Ser Ser Gly Asn Ser Ser Ser Gly Asn Tyr Phe Thr Pro Gln Gln Thr
 50 55 60
 Ser Ser Phe Leu Lys Ser Pro Thr Pro Pro Pro Ser Ser Lys Pro Ser
 65 70 75 80
 Ser Ile Pro Arg Lys Ser Ser Val Asp Leu Asn Gln Val Ser Met Leu
 85 90 95
 Ser Pro Ala Ala Leu Ser Pro Ala Ser Ser Ser Gln Arg Thr Thr Ala
 100 105 110
 Thr Gln Val Met Ala Asn Ser Ala Gly Leu Asn Phe Ile Asn Val Val
 115 120 125
 Gly Ser Val Cys Gly Ala Gln Ala Leu Met Ser Gly Ser Asn Pro Met
 130 135 140
 Leu Gly Cys Asn Thr Gly Ala Ile Thr Pro Ala Gly Ile Asn Leu Ser
 145 150 155 160
 Gly Leu Leu Pro Ser Gly Gly Leu Leu Pro Asn Ala Leu Pro Ser Ala
 165 170 175
 Met Gln Ala Ala Ser Gln Ala Gly Val Pro Phe Gly Leu Lys Asn Thr
 180 185 190
 Ser Ser Leu Arg Pro Leu Asn Leu Leu Gln Leu Pro Gly Gly Ser Leu
 195 200 205
 Ile Phe Asn Thr Leu Gln Gln Gln Gln Gln Leu Ser Gln Phe Thr
 210 215 220
 Pro Gln Gln Pro Gln Gln Pro Thr Thr Cys Ser Pro Gln Gln Pro Gly
 225 230 235 240
 Glu Gln Gly Ser Glu Gln Gly Ser Thr Ser Gln Glu Gln Ala Leu Ser

245 250 255
Ala Gln Gln Ala Ala Val Ile Asn Leu Thr Gly Val Gly Ser Phe Met
260 265 270
Gln Ser Gln Ala Ala Ala Val Ala Ile Leu Ala Ala Ser Asn Gly Tyr
275 280 285
Gly Ser Ser Ser Ser Thr Asn Ser Ser Ala Thr Ser Ser Ser Ala Tyr
290 295 300
Arg Gln Pro Val Lys Lys
305 310

<210> 81
<211> 641
<212> DNA
<213> Homo sapiens

<400> 81
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cctggatggt gtcactagtc tagtggcttt tgctaaataa acctttctta tttctaaaaa 540
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a a 641

<210> 82
<211> 94
<212> PRT
<213> Homo sapiens

<400> 82
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Cys Leu Pro Leu Phe His Ser Ser Thr Leu Pro Tyr Met Glu Asp Lys
20 25 30
Trp Thr Pro Gly Val Leu Thr Leu Leu Val Pro Ala Pro Ala Tyr Pro
35 40 45
Arg Cys Gln Gln Thr Leu Val His Arg Arg Leu Pro Gln Leu Trp Ser
50 55 60
Gln Glu Arg Ile Ser Leu His Trp Met Asp Cys Ile Leu Arg Leu Lys
65 70 75 80
Ile Ile Phe Leu Ile Phe Leu Leu Ile Ser Met Leu Ser Leu
85 90

<210> 83
<211> 832

<212> DNA
<213> Homo sapiens

<400> 83

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<210> 84
<211> 144
<212> PRT
<213> Homo sapiens

<400> 84

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Ala Arg Ser Lys His Cys Ser Val Cys Asn Trp Cys Val His Arg Phe
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Asp His His Cys Val Trp Val Asn Asn Cys Ile Gly Ala Trp Asn Ile
      35             40             45

Arg Tyr Phe Leu Ile Tyr Val Leu Thr Leu Thr Ala Ser Ala Ala Thr
      50             55             60

Val Ala Ile Val Ser Thr Thr Phe Leu Val His Leu Val Val Met Ser
      65             70             75             80

Asp Leu Tyr Gln Glu Thr Tyr Ile Asp Asp Leu Gly His Leu Pro Cys
      85             90             95

Tyr Gly His Gly Leu Ser Tyr Ser Val Pro Val Pro Asp Phe Ser Thr
      100            105            110

Asp Cys Leu His Ala Gly Leu Cys Arg Gly Ser Glu Leu Pro Pro Gly
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Trp Leu Pro Val Val Cys Pro Val Ser Gly Gly His Gln Pro Asp Tyr
      130            135            140
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<210> 85
<211> 3790
<212> DNA
<213> Homo sapiens

<400> 85

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<400> 86

Lys Thr Lys Thr Gln Ser Lys Glu Val Asn Ala Asn Lys His Lys Ala
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Asn Thr Ser Leu Pro Phe Pro Lys Phe Thr Val Asn Ser Asn Arg Leu
 275 280 285
 Arg Lys Gln Ser Ile Asn Glu Thr Pro Leu Gly Ser Leu Ser Lys Asp
 290 295 300
 Asp Gly Ala Arg Gly Ala His Gly Lys Lys Leu Asn Phe Ser Glu Ser
 305 310 315 320
 His Leu Val Ile Ile Thr Lys Glu Glu Glu Gln Lys Ala Asp Pro Lys
 325 330 335
 Glu Val Ser Asn Ser Lys Thr Lys Thr Ile Phe Pro Lys Val Leu Gly
 340 345 350
 Lys Ser Gln Ser Lys His Ile Ser Arg Asn Arg Ser Glu Met Ser Ser
 355 360 365
 Ser Ser Leu Ala Pro His Arg Val Pro Leu Ser Gln Thr Asn His Ala
 370 375 380
 Leu Thr Gly Gly Leu Glu Pro Ala Lys Ile Asn Ile Thr Ala Lys Ala
 385 390 395 400
 Pro Ser Thr Glu Tyr Asn Gln Ser His Ile Lys Ala Leu Leu Pro Glu
 405 410 415
 Asp Ser Gly Thr His Gln Val Leu Arg Ile Asp Val Thr Leu Ser Pro
 420 425 430
 Arg Asp Pro Lys Ala Pro Gly Gln Phe Gly Arg Pro Val Val Val Pro
 435 440 445
 His Gly Lys Glu Lys Glu Ala Glu Arg Arg Trp Lys Glu Gly Asn Phe
 450 455 460
 Asn Val Tyr Leu Ser Asp Leu Ile Pro Val Asp Arg Ala Ile Glu Asp
 465 470 475 480
 Thr Arg Pro Ala Gly Cys Ala Glu Gln Leu Val His Asn Asn Leu Pro
 485 490 495
 Thr Thr Ser Val Ile Met Cys Phe Val Asp Glu Val Trp Ser Thr Leu
 500 505 510
 Leu Arg Ser Val His Ser Val Ile Asn Arg Ser Pro Pro His Leu Ile
 515 520 525
 Lys Glu Ile Leu Leu Val Asp Asp Phe Ser Thr Lys Asp Tyr Leu Lys
 530 535 540
 Asp Asn Leu Asp Lys Tyr Met Ser Gln Phe Pro Lys Val Arg Ile Leu
 545 550 555 560
 Arg Leu Lys Glu Arg His Gly Leu Ile Arg Ala Arg Leu Ala Gly Ala
 565 570 575
 Gln Asn Ala Thr Gly Asp Val Leu Thr Phe Leu Asp Ser His Val Glu
 580 585 590

Cys Asn Val Gly Trp Leu Glu Pro Leu Leu Glu Arg Val Tyr Leu Ser
 595 600 605
 Arg Lys Lys Val Ala Cys Pro Val Ile Glu Val Ile Asn Asp Lys Asp
 610 615 620
 Met Ser Tyr Met Thr Val Asp Asn Phe Gln Arg Gly Ile Phe Val Trp
 625 630 635 640
 Pro Met Asn Phe Gly Trp Arg Thr Ile Pro Pro Asp Val Ile Ala Lys
 645 650 655
 Asn Arg Ile Lys Glu Thr Asp Thr Ile Arg Cys Pro Val Met Ala Gly
 660 665 670
 Gly Leu Phe Ser Ile Asp Lys Ser Tyr Phe Phe Glu Leu Gly Thr Tyr
 675 680 685
 Asp Pro Gly Leu Asp Val Trp Gly Gly Glu Asn Met Glu Leu Ser Phe
 690 695 700
 Lys Val Trp Met Cys Gly Gly Glu Ile Glu Ile Ile Pro Cys Ser Arg
 705 710 715 720
 Val Gly His Ile Phe Arg Asn Asp Asn Pro Tyr Ser Phe Pro Lys Asp
 725 730 735
 Arg Met Lys Thr Val Glu Arg Asn Leu Val Arg Val Ala Glu Val Trp
 740 745 750
 Leu Asp Glu Tyr Lys Glu Leu Phe Tyr Gly His Gly Asp His Leu Ile
 755 760 765
 Asp Gln Gly Leu Asp Val Gly Asn Leu Thr Gln Gln Arg Glu Leu Arg
 770 775 780
 Lys Lys Leu Lys Cys Lys Ser Phe Lys Trp Tyr Leu Glu Asn Val Phe
 785 790 795 800
 Pro Asp Leu Arg Ala Pro Ile Val Arg Ala Ser Gly Val Leu Ile Asn
 805 810 815
 Val Ala Leu Gly Lys Cys Ile Ser Ile Glu Asn Thr Thr Val Ile Leu
 820 825 830
 Glu Asp Cys Asp Gly Ser Lys Glu Leu Gln Gln Phe Asn Tyr Thr Trp
 835 840 845
 Leu Arg Leu Ile Lys Cys Gly Glu Trp Cys Ile Ala Pro Ile Pro Asp
 850 855 860
 Lys Gly Ala Val Arg Leu His Pro Cys Asp Asn Arg Asn Lys Gly Leu
 865 870 875 880
 Lys Trp Leu His Lys Ser Thr Ser Val Phe His Pro Glu Leu Val Asn
 885 890 895
 His Ile Val Phe Glu Asn Asn Gln Gln Leu Leu Cys Leu Glu Gly Asn
 900 905 910

Phe Ser Gln Lys Ile Leu Lys Val Ala Ala Cys Asp Pro Val Lys Pro
 915 920 925

Tyr Gln Lys Trp Lys Phe Glu Lys Tyr Tyr Glu Ala
 930 935 940

<210> 87
 <211> 1200
 <212> DNA
 <213> Homo sapiens

<400> 87
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<210> 88
 <211> 286
 <212> PRT
 <213> Homo sapiens

<400> 88
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Glu Ile His Lys Leu Arg Gln Gly Glu Asn Leu Ile Leu Gly Phe Ser
 20 25 30

Ile Gly Gly Gly Ile Asp Gln Asp Pro Ser Gln Asn Pro Phe Tyr Glu
 35 40 45

Asp Lys Thr Asp Lys Gly Ile Tyr Val Thr Arg Val Ser Glu Gly Gly
 50 55 60

Pro Ala Glu Ile Ala Gly Leu Gln Ile Gly Asp Lys Ile Met Gln Val
 65 70 75 80

Asn Gly Trp Asp Met Thr Met Val Thr His Asp Gln Ala Arg Lys Arg
 85 90 95

Leu Thr Lys Arg Ser Glu Glu Val Val Arg Leu Leu Val Thr Arg Gln

100

105

110

Ser Leu Gln Lys Ala Cys Ser Ser His Ala Val Leu Ala Ala Thr Thr
115 120 125

Ile Cys Asp Ser Cys Leu Pro Pro Leu Cys Thr Val Thr Pro Leu Pro
130 135 140

His Ser Val Pro Ile Trp Leu Leu Leu Thr Ser Phe Leu Ser Trp Thr
145 150 155 160

Pro Arg Ile Gly Asn Lys Gly Leu Glu Leu Ser Ser Ser Gln Ser Ala
165 170 175

Val Thr Thr Gly Ser Gly Pro Thr Leu Leu Leu Gly His Ser Ser Gly
180 185 190

Trp Ala Ser Gly Asn His Tyr Leu Leu Gly Ala Pro Lys Ser Trp Glu
195 200 205

Met Leu Glu Glu Pro Gly Leu Ser Arg Phe Cys Leu Ala Ala Gly Leu
210 215 220

Gly Ser Ala Pro Ala Pro Gln Pro Trp Cys Val His Thr Ala Val Leu
225 230 235 240

Leu Pro Leu Gly Gly Leu Asp Thr His Pro Ala Arg Gly Ala Thr Lys
245 250 255

Leu Cys Pro Asp Glu Ala Arg Trp Ala Pro Arg Ser Leu Pro Leu Ser
260 265 270

Arg Gly Val Leu Ala Ser Pro Gly Phe Ala Phe Leu Arg Ile
275 280 285

<210> 89

<211> 1023

<212> DNA

<213> Homo sapiens

<400> 89

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gcctttaact agagtgtgtg atggtagatt atttcagata tgtatgtaaa actgtttcct 960
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aaa 1023

<210> 90
 <211> 149
 <212> PRT
 <213> Homo sapiens

<400> 90
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 20 25 30
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 35 40 45
 Ile Tyr Asp Val Ile Val Glu Pro Pro Ser Val Gly Ser Met Thr Asp
 50 55 60
 Glu His Gly His Gln Arg Pro Val Ala Phe Leu Ala Tyr Arg Val Asn
 65 70 75 80
 Gly Gln Tyr Ile Met Glu Gly Leu Ala Ser Ser Phe Leu Phe Thr Met
 85 90 95
 Gly Gly Leu Gly Phe Ile Ile Leu Asp Arg Ser Asn Ala Pro Asn Ile
 100 105 110
 Pro Lys Leu Asn Arg Phe Leu Leu Leu Phe Ile Gly Phe Val Cys Val
 115 120 125
 Leu Leu Ser Phe Phe Met Ala Arg Val Phe Met Arg Met Lys Leu Pro
 130 135 140
 Gly Tyr Leu Met Gly
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<210> 91
 <211> 3901
 <212> DNA
 <213> Homo sapiens

<400> 91
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Tyr Arg Ile Ala Arg Arg Met Lys Pro Thr His Thr Met Val Asn Cys
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Trp Phe Cys Asn Gln Asp Thr Leu Val Pro Tyr Gly Asn Arg Asn Cys
50 55 60

Trp Asp Cys Pro His Cys Glu Gln Tyr Asn Gly Phe Gln Glu Asn Gly
65 70 75 80

Asp Tyr Asn Lys Pro Ile Pro Ala Gln Tyr Leu Glu His Leu Asn His
85 90 95

Val Val Ser Ser Ala Pro Ser Leu Arg Asp Pro Ser Gln Pro Gln Gln
100 105 110

Trp Val Ser Ser Gln Val Leu Leu Cys Lys Arg Cys Asn His His Gln
115 120 125

Thr Thr Lys Ile Lys Gln Leu Ala Ala Phe Ala Pro Arg Glu Glu Gly
130 135 140

Arg Tyr Asp Glu Glu Val Glu Val Tyr Arg His His Leu Glu Gln Met
145 150 155 160

Tyr Lys Leu Cys Arg Pro Cys Gln Ala Ala Val Glu Tyr Tyr Ile Lys
165 170 175

His Gln Asn Arg Gln Leu Arg Ala Leu Leu Ser His Gln Phe Lys
180 185 190

Arg Arg Glu Ala Asp Gln Thr His Ala Gln Asn Phe Ser Ser Ala Val
195 200 205

Lys Ser Pro Val Gln Val Ile Leu Leu Arg Ala Leu Ala Phe Leu Ala
210 215 220

Cys Ala Phe Leu Leu Thr Thr Ala Leu Tyr Gly Ala Ser Gly His Phe
225 230 235 240

Ala Pro Gly Thr Thr Val Pro Leu Ala Leu Pro Pro Gly Gly Asn Gly
245 250 255

Ser Ala Thr Pro Asp Asn Gly Thr Thr Pro Gly Ala Glu Gly Trp Arg
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Gln Leu Leu Gly Leu Leu Pro Glu His Met Ala Glu Lys Leu Cys Glu
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Ala Trp Ala Phe Gly Gln Ser His Gln Thr Gly Val Val Ala Leu Gly
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Leu Leu Thr Cys Leu Leu Ala Met Leu Leu Ala Gly Arg Ile Arg Leu
305 310 315 320

Arg Arg Ile Asp Ala Phe Cys Thr Cys Leu Trp Ala Leu Leu Leu Gly
325 330 335

Leu His Leu Ala Glu Gln His Leu Gln Ala Ala Ser Pro Ser Trp Leu
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Asn Thr Leu Lys Phe Ser Thr Thr Ser Leu Cys Cys Leu Val Gly Phe
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Pro Arg Arg Ser Glu Lys Gln Pro
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<211> 2203

<212> DNA

<213> Homo sapiens

<400> 93

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<212> PRT

<213> Homo sapiens

<400> 94

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35 40 45
Lys Val His Leu Asp Ser Ala Val Ala Leu Ala Ala Glu Ser Pro Val
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Asn Met Met Pro Trp Gln Gly Asp Thr Asn Asn Met Ile Asp Arg Phe
65 70 75 80
Asp Val Arg Ala His Leu Asp His Ile Pro Asp Tyr Thr Pro Pro Leu
85 90 95
Leu Thr Thr Ile Ser Pro Glu Gln Glu Ser Asp Glu Arg Lys Cys Asn
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Tyr Glu Arg Tyr Arg Gly Leu Val Gln Asn Asp Phe Ala Gly Ile Ser
115 120 125
Glu Glu Gln Cys Leu Tyr Gln Ile Tyr Ile Asp Glu Leu Tyr Gly Gly
130 135 140
Leu Gln Arg Pro Ser Glu Asp Glu Lys Lys Lys Leu Ala Glu Lys Lys
145 150 155 160
Ala Ser Ile Gly Tyr Thr Tyr Glu Asp Ser Thr Val Ala Glu Val Glu
165 170 175
Lys Ala Ala Glu Lys Pro Glu Glu Glu Glu Ser Ala Ala Glu Glu Glu
180 185 190
Ser Asn Ser Asp Glu Asp Glu Val Ile Pro Asp Ile Asp Val Glu Val
195 200 205
Asp Val Asp Glu Leu Asn Gln Glu Gln Val Ala Asp Leu Asn Lys Gln
210 215 220
Ala Thr Thr Tyr Gly Met Ala Asp Gly Asp Phe Val Arg Met Leu Arg
225 230 235 240
Lys Asp Lys Glu Glu Ala Glu Ala Ile Lys His Ala Lys Ala Leu Glu
245 250 255
Glu Glu Lys Ala Met Tyr Ser Gly Arg Arg Ser Arg Arg Gln Arg Arg
260 265 270
Glu Phe Arg Glu Lys Arg Leu Arg Gly Arg Lys Ile Ser Pro Pro Ser
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Ser Glu Ser Ser Ser Glu Ser Arg Ser Arg Ser Arg Ser Pro Thr Pro
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 Thr Gly Lys Pro Pro Ala Pro Pro Gln Pro Gly Gly Pro Ala Pro Gly
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 Ser Trp Ser Leu Ser Pro Ser Arg Ser Arg Ser Leu Thr Arg Ser Arg
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 Ala Gly Lys Glu Thr Gly Ala Ala Lys Pro Lys Leu Thr Pro Gln Glu
 565 570 575
 Lys Leu Lys Leu Arg Met Gln Lys Ala Leu Asn Arg Gln Phe Lys Ala
 580 585 590
 Asp Lys Lys Ala Ala Gln Glu Lys Met Ile Gln Gln Glu His Glu Arg
 595 600 605
 Gln Glu Arg Glu Asp Glu Leu Arg Ala Met Ala Arg Lys Ile Arg Met
 610 615 620

Lys Glu Arg Glu Arg Arg Glu Lys Glu Arg Glu Glu Trp Glu Arg Gln
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Tyr Ser Arg Gln Ser Arg Ser Pro Ser Pro Arg Tyr Ser Arg Glu Tyr
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Arg His

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<213> Homo sapiens

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35 40 45
Gln Tyr Gln Arg Met Leu Ser Thr Leu Ser Gln Cys Glu Phe Ser Met
50 55 60
Gly Lys Thr Leu Leu Val Tyr Asp Met Asn Leu Arg Glu Met Glu Asn
65 70 75 80
Tyr Glu Lys Ile Tyr Lys Glu Ile Glu Cys Ser Ile Ala Gly Ala His
85 90 95

Glu Lys Ile Ala Glu Cys Lys Lys Gln Ile Leu Gln Ala Lys Arg Ile
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 Arg Lys Asn Arg Gln Glu Tyr Asp Ala Leu Ala Lys Val Ile Gln His
 115 120 125
 His Pro Asp Arg His Glu Thr Leu Lys Glu Leu Glu Ala Leu Gly Lys
 130 135 140
 Glu Leu Glu His Leu Ser His Ile Lys Glu Ser Val Glu Asp Lys Leu
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 Glu Leu Arg Arg Lys Gln Phe His Val Leu Leu Ser Thr Ile His Glu
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 <211> 97
 <212> PRT
 <213> Homo sapiens

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 Asp Ile Glu Glu Lys Lys Ser Ile Lys Lys Lys Ile Lys Glu Leu Lys
 35 40 45

Phe Leu Asp Ser Lys Ile Ala Gln Asn Leu Cys Lys Tyr His Ile Pro
50 55 60

Ile Pro Phe Lys Asp Ser Gly Asn Ile Ser Leu Asn Asp Phe Ile Phe
65 70 75 80

Phe Lys Thr Asp Tyr Ser Leu Phe Ala Ile Phe Ile Leu Leu Leu Tyr
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<212> DNA
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<210> 100
<211> 132
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<213> Homo sapiens

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35 40 45

Thr Leu Leu Ser Gly Thr Thr Ser Phe Pro Phe Glu Glu Thr Ala Thr

50

55

60

Ala Val Ala Lys Ala Ala Ala Pro Ala Met Arg Val Tyr Ile Phe
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Phe Thr Gln Ser Ser Gly Ile Val His Leu Phe Phe Lys Thr Gln Arg
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Gly Lys Glu Pro Cys Ile Ile Cys Glu His Cys Ile Ile Gly Asn Val
100 105 110

Val Gln Thr Leu Leu Tyr Ser Asp Leu Ser Cys Ser Cys Ser Lys Asn
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Pro Leu Trp Thr
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<211> 1213

<212> DNA

<213> Homo sapiens

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<211> 100

<212> PRT

<213> Homo sapiens

<400> 102

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Cys Gly Trp Gly Val Ala Thr Thr Glu His Met Ala Val Ser Arg Arg
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Lys His Phe Ser Ser Ile Cys Leu His Ala Gln Gly Ser Ser Arg Leu
35 40 45

Pro Val Leu Ser Thr Gly Thr Ala Val Ser Glu Leu Leu Arg Thr Ser
50 55 60

Leu Cys Gln Val Val Glu Leu Gly Pro Ser Pro Tyr Leu Ser Leu Val
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Pro Thr Val Leu Leu Thr Val Gln His Leu Gly Ala Leu Ala Trp Gly
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Trp Arg Pro Trp
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<210> 103
<211> 1036
<212> DNA
<213> Homo sapiens

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<211> 87
<212> PRT
<213> Homo sapiens

<400> 104
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Val Leu Ile Val Asp Ser Met Thr Gln Leu Ser His His Pro Arg Ile
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Tyr Glu Phe Glu Ile Thr Asp Leu Phe Ser Ser Tyr Cys Ile His Ile
35 40 45
Asn Ile Cys Glu Phe Val Val Gln Leu Phe Ile Gln Thr Lys Asn Ile
50 55 60
Pro Ser Arg Lys Leu His Phe Tyr His Lys His Phe Asn Ile Thr Asn
65 70 75 80

Ile Arg Thr Ser Leu Pro Cys

85

<210> 105
<211> 2349
<212> DNA
<213> Homo sapiens

<400> 105
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<210> 106
<211> 539
<212> PRT
<213> Homo sapiens

<400> 106
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 Leu Ser Lys Leu Ser Pro Ser Ser Ser Ser Ser Ser Ser Ser Ser
 35 40 45
 Ser Ser Ser Ser Thr Asp Glu Ser Glu Asp Glu Lys Glu Glu Lys Leu
 50 55 60
 Thr Asp Gln Ser Arg Ser Lys Leu Tyr Asp Glu Glu Ser Leu Leu Ser
 65 70 75 80
 Leu Thr Met Ser Gln Asp Gly Phe Pro Asn Glu Asp Gly Glu Gln Met
 85 90 95
 Thr Pro Glu Leu Leu Leu Leu Gln Glu Arg Gln Arg Ala Ser Glu Trp
 100 105 110
 Pro Lys Asp Arg Val Leu Ile Asn Arg Ile Asp Leu Val Cys Gln Ala
 115 120 125
 Val Leu Ser Gly Lys Trp Pro Ser Ser Arg Arg Ser Gln Glu Met Val
 130 135 140
 Thr Gly Gly Ile Leu Gly Pro Gly Asn His Leu Leu Asp Ser Pro Ser
 145 150 155 160
 Leu Thr Pro Gly Glu Tyr Gly Asp Ser Pro Val Pro Thr Pro Arg Ser
 165 170 175
 Ser Ser Ala Ala Ser Met Ala Glu Glu Glu Ala Ser Ala Val Ser Thr
 180 185 190
 Ala Ala Ala Gln Phe Thr Lys Leu Arg Arg Gly Met Asp Glu Lys Glu
 195 200 205
 Phe Thr Val Gln Ile Lys Asp Glu Glu Gly Leu Lys Leu Thr Phe Gln
 210 215 220
 Lys His Lys Leu Met Ala Asn Gly Val Met Gly Asp Gly His Pro Leu
 225 230 235 240
 Phe His Lys Lys Lys Gly Asn Arg Lys Lys Leu Val Glu Leu Glu Val
 245 250 255
 Glu Cys Met Glu Glu Pro Asn His Leu Asp Val Asp Leu Glu Thr Arg
 260 265 270
 Ile Pro Val Ile Asn Lys Val Asp Gly Thr Leu Leu Val Gly Glu Asp
 275 280 285
 Ala Pro Arg Arg Ala Glu Leu Glu Met Trp Leu Gln Gly His Pro Glu
 290 295 300
 Phe Ala Val Asp Pro Arg Phe Leu Ala Tyr Met Glu Asp Arg Arg Lys
 305 310 315 320
 Gln Lys Trp Gln Arg Cys Lys Lys Asn Asn Lys Ala Glu Leu Asn Cys
 325 330 335

Leu Gly Met Glu Pro Val Gln Thr Ala Asn Ser Arg Asn Gly Lys Lys
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 Gly His His Thr Glu Thr Val Phe Asn Arg Val Leu Pro Gly Pro Ile
 355 360 365
 Ala Pro Glu Ser Ser Lys Lys Arg Ala Arg Arg Met Arg Pro Asp Leu
 370 375 380
 Ser Lys Met Met Ala Leu Met Gln Gly Gly Ser Thr Gly Ser Leu Ser
 385 390 395 400
 Leu His Asn Thr Phe Gln His Ser Ser Ser Gly Leu Gln Ser Val Ser
 405 410 415
 Ser Leu Gly His Ser Ser Ala Thr Ser Ala Ser Leu Pro Phe Met Pro
 420 425 430
 Phe Val Met Gly Gly Ala Pro Ser Ser Pro His Val Asp Ser Ser Thr
 435 440 445
 Met Leu His His His His His His Pro His Pro His His His His His
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 His His Pro Gly Leu Arg Ala Pro Gly Tyr Pro Ser Ser Pro Val Thr
 465 470 475 480
 Thr Ala Ser Gly Thr Thr Leu Arg Leu Pro Pro Leu Gln Pro Glu Glu
 485 490 495
 Asp Asp Asp Glu Asp Glu Glu Asp Asp Asp Asp Leu Ser Gln Gly Tyr
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<210> 107
 <211> 3004
 <212> DNA
 <213> Homo sapiens

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<210> 108
 <211> 959
 <212> PRT
 <213> Homo sapiens

<400> 108

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Arg Phe Trp Gly Pro Trp Pro Leu Leu Thr Trp Gln Leu Leu Ser Leu
 20 25 30

Leu Val Lys Glu Ala Gln Pro Leu Val Trp Val Lys Asp Pro Leu Gln
 35 40 45

Leu Thr Ser Asn Pro Leu Gly Pro Pro Glu Pro Trp Ser Ser Arg Ser
 50 55 60

Ser His Leu Pro Trp Glu Ser Pro His Ala Pro Ala Pro Pro Ala Ala
 65 70 75 80

Pro Gly Asp Phe Asp Tyr Leu Gly Pro Ser Ala Ser Ser Gln Met Ser

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Pro Pro Pro Glu His Pro Glu Val Thr Leu Pro Pro Ser Asp Lys Gly

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Arg Ala Ser Glu Lys Tyr Lys Asp Asn Pro Ser Ile Ser Gly Ala
945 950 955

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<210> 109
<211> 1331
<212> DNA
<213> Homo sapiens
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<400> 109

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<210> 110

<211> 118

<212> PRT

<213> Homo sapiens

<400> 110

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Gly Gly Glu Val Ala Tyr Gly Gln Val Leu Gly Val Ile Gly Tyr Ser
35 40 45
Leu Leu Pro Leu Ile Val Ile Ala Pro Val Leu Leu Val Val Gly Ser
50 55 60
Phe Glu Val Val Ser Thr Leu Ile Lys Leu Phe Gly Val Phe Trp Ala
65 70 75 80
Ala Tyr Ser Ala Ala Ser Leu Leu Val Gly Glu Glu Phe Lys Thr Lys
85 90 95
Lys Pro Leu Leu Ile Tyr Pro Ile Phe Leu Leu Tyr Ile Tyr Phe Leu
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Ser Leu Tyr Thr Gly Val
115

<210> 111

<211> 2610

<212> DNA

<213> Homo sapiens

<400> 111

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2610

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<210> 112

<211> 116

<212> PRT

<213> Homo sapiens

<400> 112

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Met Ala Gly Leu Leu Asn Val Thr Phe Ile Tyr Leu Leu Leu Glu Cys
  1              5              10              15

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```

Leu Ser Leu Tyr Thr His Val Thr Cys Ser Ser Leu Pro Ser Ser Leu
      20              25              30

```

```

Cys Leu Tyr Ile Tyr Tyr Tyr His Arg Gly Leu Gly Lys Lys Thr Pro
   35              40              45

```

```

Thr Ala Ala Pro His Thr His Pro Pro Ala Leu Tyr His Leu Leu Cys
   50              55              60

```

```

Phe Val Phe Leu Cys Arg Ile His Asp Phe Leu Lys Tyr Asn Phe Phe
   65              70              75              80

```

```

Asn Val Tyr Ile Leu Tyr Ala Phe Ser His Ser Tyr Val Lys Ser Gly
      85              90              95

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Arg His Arg Leu Val Phe Leu Phe Thr Val Asp Ala Ser Val Pro Lys
 100 105 110

Ile Cys Ile Ala
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<210> 113
 <211> 2759
 <212> DNA
 <213> Homo sapiens

<400> 113
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 tggtagtaag gggattagt cttggtgtgc ttaggggggt cagagtaggg aggggtccag 360
 gaaggggtcc agagtgggct cacaggggac ctctccctt ggctcttgg agtccagggtc 420
 gtcgagggcg caaagctgca cgccatcctg ggcaagctgg gcccgagcg tgggcgcgggt 480
 gaggacgcgc agctcatgca gccgtccca agagcaagag aaagcgtcgg ggccttcacc 540
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 aagagaaaaa aaatgaaatg gttgtttact aattttatac tccattaaa aatctcta 2700
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<210> 114
 <211> 99
 <212> PRT
 <213> Homo sapiens

<400> 114
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 1 5 10 15
 His Ala Met Arg Arg Leu Ile Asn Leu Leu Arg Gln Ser Gln Ser Tyr
 20 25 30
 Cys Thr Asp Thr Glu Cys Leu Gln Glu Leu Pro Gly Pro Ser Gly Asp
 35 40 45
 Asn Gly Ile Ser Val Thr Met Ile Leu Val Ala Trp Met Val Ile Ala
 50 55 60
 Leu Ile Leu Phe Leu Leu Arg Pro Pro Asn Leu Arg Gly Ser Ser Leu
 65 70 75 80
 Pro Gly Lys Pro Thr Ser Pro His Asn Gly Gln Asp Pro Pro Ala Pro
 85 90 95
 Pro Val Asp

<210> 115
 <211> 1404
 <212> DNA
 <213> Homo sapiens

<400> 115
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 gcctctgttc tcggaatccg ggtgctgcgg attgaggtcc cgggttcctaa cgggtgggac 180
 ggtgtcctcg ggtgagatt tggcgtttcc tcggggcctt ggtgggacg gtgtcctcag 240
 gatgagattt aggggtttcct cggggccttc gggatcttca cctaataatcc ggtattattt 300
 tatgagagga gtggtcttgg ctgtcagaac tggatccctg gggatgatatt tgggaattag 360
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 gctcacaggg tctgaaggcc acgcatgagg caaaggtaaa gttctgagcc acccggtgcc 660
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 taccgccagc tgcgagagaa ggaccccaag tacagtgtc tccgccagaa tttcttcgcg 1260
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 tcttcagaaa aaaaaaaaaa aaaa 1404

<210> 116
 <211> 184
 <212> PRT
 <213> Homo sapiens

<400> 116
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 1 5 10 15
 Ser Ala Leu Thr Pro Leu Trp Ser Pro Tyr Pro Ala Gly Phe Leu Leu
 20 25 30
 Phe Arg Ser Leu Pro Arg His Thr Phe Gly Leu Val Gln Ser Lys Leu
 35 40 45
 Phe Pro Phe Tyr Phe His Ile Ser Met Gly Cys Ala Phe Ile Asn Leu
 50 55 60
 Cys Ile Leu Ala Ser Gln His Ala Trp Ala Gln Leu Thr Phe Trp Glu
 65 70 75 80
 Ala Ser Gln Leu Tyr Leu Leu Phe Leu Ser Leu Thr Leu Ala Thr Val
 85 90 95
 Asn Ala Arg Trp Leu Glu Pro Arg Thr Thr Ala Ala Met Trp Ala Leu
 100 105 110
 Gln Thr Val Glu Lys Glu Arg Gly Leu Gly Gly Glu Val Pro Gly Ser
 115 120 125
 His Gln Gly Pro Asp Pro Tyr Arg Gln Leu Arg Glu Lys Asp Pro Lys
 130 135 140
 Tyr Ser Ala Leu Arg Gln Asn Phe Phe Arg Tyr His Gly Leu Ser Ser
 145 150 155 160
 Leu Cys Asn Leu Gly Cys Val Leu Ser Asn Gly Leu Cys Leu Ala Gly
 165 170 175
 Leu Ala Leu Glu Ile Arg Ser Leu
 180

<210> 117
 <211> 1801
 <212> DNA
 <213> Homo sapiens

<400> 117
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 tgaatagctt taattcagct gttgaatctc acttgaattt gagcaaaacc ttcattcttta 180
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 tctgggttga tcatcatcat catcatcatt tggttatcag ttcttgagtt atttttacca 360
 gggagtttta tacctttaga caactatttt gaattatctc aggaatgtca tatatctctg 420
 cctctttaga gtcatgcaact ggcactttgt ctgtttggtg acatcatggt tccctgactg 480
 ttcttcatct tttagttat acattgatat ctgtgcattg aatatgtagg tatttataaa 540
 cagtctttgc aatctggcct tgtctgtgat tgtccttgta tagtaggtct gtccagaaat 600
 tgtaagcata ctgtcttttt tgggtcttta gcccgtgaac gctacagccc gtgtagtgcc 660

aaatggtgcc ctaagcccag gttccctgca gtccactctg tgatttggtt gttgactgct 720
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 aattaattgg ggattgggta aataaactat ggtttgatag gctctaaaaa taatgtttaca 1560
 gaaaaaagtg tactgatatg gcaaaatgta tgacttatag ttaaaaaagc aggttagatg 1620
 ttgatagata cagtatgata gaaaaagatc aggaaggat atgctgacat ttaaatctgg 1680
 atatttatga gtgttttttt tatttcaatc tttgtacatg catgtatttt ctagaaattg 1740
 tattactatc tttgtaataa agtaaattat ttttaaggga ctaaaaaa aaaaaaaa 1800
 a 1801

<210> 118

<211> 86

<212> PRT

<213> Homo sapiens

<400> 118

Met Val Arg Lys Val Asn Ala His Leu Pro Leu Ser Phe Pro Thr Val
 1 5 10 15
 Glu Thr Asp Ser Arg Glu Ile Leu Gln Val Arg Cys Tyr Val Gly Leu
 20 25 30
 Arg Glu Arg Cys Tyr Asp Gln Thr Glu Pro Phe Ser Leu Pro Ser Val
 35 40 45
 His Gly Phe Ser Trp Leu Cys Gly Pro Val Ser Cys His Ser Phe Thr
 50 55 60
 Pro Asn Phe Trp Asp Ile Gln Gly Asn Asn Leu Ala Thr Gly Tyr Leu
 65 70 75 80
 Leu Val Glu Ile Met Trp
 85

<210> 119

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 119

ancgggagcc tcttgaccat ctctcttctt

29

<210> 120

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 120

cncacagaaa attcaataag accctcgct

29

<210> 121

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 121

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29

<210> 122

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 122

antcctgcac accagccagt aacgccacc

29

<210> 123

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)
<223> biotinylated phosphoramidite residue

<400> 123
gnggctggaa agatgtgtgg ggatcaaga

29

<210> 124
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 124
anatgggtct aagccacaca acaggggtga

29

<210> 125
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 125
ancggcaggg aacttacagg gacagagct

29

<210> 126
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
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<222> (2)
<223> biotinylated phosphoramidite residue

<400> 126
gngttttcgg tgatgatggt gtagaggat

29

<210> 127
<211> 29
<212> DNA
<213> Artificial Sequence

<220>

[illegible]

<223> biotinylated phosphoramidite residue

29

<213> Artificial Sequence

<223> oligonucleotide

<223> biotinylated phosphoramidite residue

29

<213> Artificial Sequence

<223> oligonucleotide

<223> biotinylated phosphoramidite residue

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<213> Artificial Sequence

<223> oligonucleotide

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29

<211> 29

<212> DNA
<213> Artificial Sequence

<220>
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<222> (2)
<223> biotinylated phosphoramidite residue

<400> 131
tntctgtgctg tgcctttctc tatccgaac

29

<210> 132
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
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<222> (2)
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<400> 132
gngcatctca ctggatgtca tcatcatca

29

<210> 133
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<213> Artificial Sequence

<220>
<223> oligonucleotide

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<400> 133
tngtccatgt gaagggcatg ggccagttg

29

<210> 134
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<212> DNA
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<220>
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<222> (2)
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<400> 134

gngcactgta ttgagctgat tgctgaagc

29

<210> 135

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 135

cncagaagca gaagaatgac aggcaacac

29

<210> 136

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 136

anacattctg agtagttgca tgatttccc

29

<210> 137

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 137

gnccagaaag ttgaggacat gctgggcag

29

<210> 138

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)
<223> biotinylated phosphoramidite residue

<400> 138
angggaacaa gacaactgga gaaggggtca

29

<210> 139
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 139
tngtctccca ggtagacaga gggcttcag

29

<210> 140
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
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<222> (2)
<223> biotinylated phosphoramidite residue

<400> 140
anccatctac atgtgcattg acaagctta

29

<210> 141
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 141
tngtgataga tcctttcgta acaccaagt

29

<210> 142
<211> 29
<212> DNA
<213> Artificial Sequence

<220>

[illegible]

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<221> misc_feature
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<223> biotinylated phosphoramidite residue

angaccagat ctcacccagc acatcaaac

29

<211> 29

<213> Artificial Sequence

<223> oligonucleotide

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<221> misc_feature
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<223> biotinylated phosphoramidite residue

tntttgggggc aagatggctg ttaagcagt

29

<211> 29

<213> Artificial Sequence

<223> oligonucleotide

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<223> biotinylated phosphoramidite residue

cnngttgttc cgggcagggc attcttgtc

29

<211> 29

<213> Artificial Sequence

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223> oligonucleotide

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221> misc_feature
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223> biotinylated phosphoramidite residue

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29

211> 29

<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 146
cnggatgtgt gatattggag cttgctgtt

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<210> 147
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<212> DNA
<213> Artificial Sequence

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<223> oligonucleotide

<220>
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<222> (2)
<223> biotinylated phosphoramidite residue

<400> 147
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29

<210> 148
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
<221> misc_feature
<222> (2)
<223> biotinylated phosphoramidite residue

<400> 148
anatcactgc atttgttctg gaacctgac

29

<210> 149
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide

<220>
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<222> (2)
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<400> 149

gntgacttca atctcctcac cttccaccg

29

<210> 150

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide

<220>

<221> misc_feature

<222> (2)

<223> biotinylated phosphoramidite residue

<400> 150

gnagtgccac ctatgactac caaattctc

29

<210> 151

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

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<400> 152

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<400> 158

tngagttagc agagcaagaa gcaaggagg

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<400> 159

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<400> 160

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<210> 161

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29

<210> 177
<211> 388
<212> PRT
<213> Homo sapiens

<400> 177

Met His Leu Tyr Lys Thr Asn Lys Met Thr Ser Leu Lys Glu Asp Val
1 5 10 15

Arg Arg Ser Ala Met Leu Cys Ile Leu Thr Val Pro Ala Ala Met Thr
20 25 30

Ser His Asp Leu Met Lys Phe Val Ala Pro Phe Asn Glu Val Ile Glu
35 40 45

Gln Met Lys Ile Ile Arg Asp Ser Thr Pro Asn Gln Tyr Met Val Leu
50 55 60

Ile Lys Phe Arg Ala Gln Ala Asp Ala Asp Ser Phe Tyr Met Thr Cys
65 70 75 80

Asn Gly Arg Gln Phe Asn Ser Ile Glu Asp Asp Val Cys Gln Leu Val
85 90 95

Tyr Val Glu Arg Ala Glu Val Leu Lys Ser Glu Asp Gly Ala Ser Leu
100 105 110

Pro Val Met Asp Leu Thr Glu Leu Pro Lys Cys Thr Val Cys Leu Glu
115 120 125

Arg Met Asp Glu Ser Val Asn Gly Ile Leu Thr Thr Leu Cys Asn His
130 135 140

Ser Phe His Ser Gln Cys Leu Gln Arg Trp Asp Asp Thr Thr Cys Pro
145 150 155 160

Val Cys Arg Tyr Cys Gln Thr Pro Glu Pro Val Glu Glu Asn Lys Cys
165 170 175

Phe Glu Cys Gly Val Gln Glu Asn Leu Trp Ile Cys Leu Ile Cys Gly
180 185 190

His Ile Gly Cys Gly Arg Tyr Val Ser Arg His Ala Tyr Lys His Phe
195 200 205

Glu Glu Thr Gln His Thr Tyr Ala Met Gln Leu Thr Asn His Arg Val
210 215 220

Trp Asp Tyr Ala Gly Asp Asn Tyr Val His Arg Leu Val Ala Ser Lys
225 230 235 240

Thr Asp Gly Lys Ile Val Gln Tyr Glu Cys Glu Gly Asp Thr Cys Gln
245 250 255

Glu Glu Lys Ile Asp Ala Leu Gln Leu Glu Tyr Ser Tyr Leu Leu Thr
260 265 270

Ser Gln Leu Glu Ser Gln Arg Ile Tyr Trp Glu Asn Lys Ile Val Arg
275 280 285

Ile Glu Lys Asp Thr Ala Glu Glu Ile Asn Asn Met Lys Thr Lys Phe
290 295 300

Lys Glu Thr Ile Glu Lys Cys Asp Asn Leu Glu His Lys Leu Asn Asp
305 310 315 320

Leu Leu Lys Glu Lys Gln Ser Val Glu Arg Lys Cys Thr Gln Leu Asn
325 330 335

Thr Lys Val Ala Lys Leu Thr Asn Glu Leu Lys Glu Glu Gln Glu Met
340 345 350

Asn Lys Cys Leu Arg Ala Asn Gln Val Leu Leu Gln Asn Lys Leu Lys
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Glu Glu Glu Arg Val Leu Lys Glu Thr Cys Asp Gln Lys Asp Leu Gln
370 375 380

Ile Thr Glu Ile
385

<210> 178

<211> 171

<212> PRT

<213> Homo sapiens

<400> 178

Met Met Met Gln Cys Val Ser Arg Met Leu Ala His Pro Leu His Val
1 5 10 15

Ile Ser Met Arg Cys Met Val Gln Phe Val Gly Arg Glu Ala Lys Tyr
20 25 30

Ser Gly Val Leu Ser Ser Ile Gly Lys Ile Phe Lys Glu Glu Gly Leu
35 40 45

Leu Gly Phe Phe Val Gly Leu Ile Pro His Leu Leu Gly Asp Val Val
50 55 60

Phe Leu Trp Gly Cys Asn Leu Leu Ala His Phe Ile Asn Ala Tyr Leu
65 70 75 80

Val Asp Asp Ser Phe Ser Gln Ala Leu Ala Ile Arg Ser Tyr Thr Lys
85 90 95

Phe Val Met Gly Ile Ala Val Ser Met Leu Thr Tyr Pro Phe Leu Leu
100 105 110

Val Gly Asp Leu Met Ala Val Asn Asn Cys Gly Leu Gln Ala Gly Leu
115 120 125

Pro Pro Tyr Ser Pro Val Phe Lys Ser Trp Ile His Cys Trp Lys Tyr
130 135 140

Leu Ser Val Gln Gly Gln Leu Phe Arg Gly Ser Ser Leu Leu Phe Arg

160

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<210> 179
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<212> PRT
<213> Homo sapiens
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<210> 180
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<212> PRT
<213> Homo sapiens
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Ile Pro Arg Ala Ser Pro Val Leu Pro Ser Pro Arg Thr Thr Gly Pro
65 70 75 80

Leu Ala

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